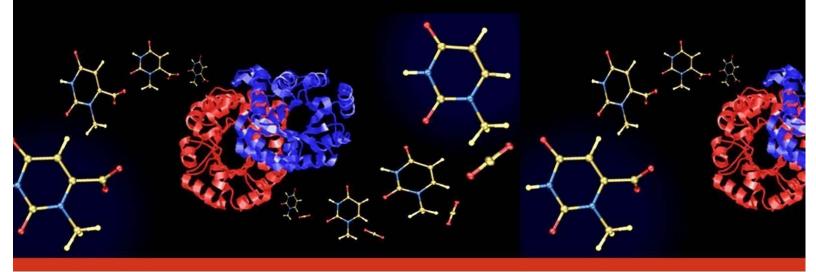
Grants.gov Application Guide



A Guide for Preparation and Submission of NSF Applications via Grants.gov



National Science Foundation

December 1, 2009



Grants.Gov Application Guide

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SUMMARY OF SIGNIFICANT CHANGES

Chapter III - Section 6, Next Steps - Post Submission to Grants.gov

• This section has been updated to reflect the availability of Research.gov to track the status of grant applications to NSF.

Chapter VI - Section 1, NSF Cover Page

• The NSF Grants.gov Application Cover Page has been updated to include the Grants for Rapid Response Research (RAPID) and EArly-concept Grants for Exploratory Research (EAGER) mechanisms.

Chapter VI - Section 2, NSF Application Checklist

The NSF Application Checklist form is no longer a form required to be submitted with each application.
Rather, it has been converted to a Checklist for use by the organization in conducting an administrative review, prior to electronic submission, to ensure that an application complies with all application preparation instructions, in the format specified. The NSF Application Checklist now appears in Chapter VII.

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I. INTRODUCTION

1. BACKGROUND

The National Science Foundation (NSF) funds research and education in science and engineering through grants and cooperative agreements. The Foundation accounts for approximately 20 percent of federal support to academic institutions for basic research. Grants.gov allows organizations to electronically find and apply for competitive grant opportunities from all Federal grant-making agencies, including NSF. Grants.gov encompasses over 900 grant programs offered by the 26 Federal grant-making agencies. It streamlines the process of awarding \$350+ billion annually to colleges, universities, K-12 school systems, businesses, informal science organizations, and other research organizations throughout the US. Grants.gov is one of 24 Federal cross-agency E-Government initiatives focused on improving access to government services via the Internet.

2. PURPOSE AND SCOPE

This document was developed to assist applicants in the preparation and submission of applications to NSF. It is intended as the primary document for use in preparation of applications via Grants.gov. Where appropriate, relevant sections of the NSF Grant Proposal Guide (GPG) and Grants.gov Applicant User Guide have been incorporated by reference.

For the purpose of this document, the term "application" (used by Grants.gov) will replace the term "proposal" (used by NSF). However, the terms are synonymous.

3. INTENDED AUDIENCE

NSF applicants include scientists, engineers and educators. Graduate students are not encouraged to submit research applications, but should arrange to serve as research assistants to faculty members. Some NSF divisions accept applications for Doctoral Dissertation Research Grants when submitted by a faculty member on behalf of the graduate student. A full listing of eligible applicants is contained in the NSF Grant Proposal Guide (GPG Chapter I.E).

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NSF Grant Proposal Guide Chapter I.E: http://www.nsf.gov/publications/pub summ.jsp?ods key=gpg

4. SYMBOLS

The following symbols are used throughout this document to highlight information that is of particular interest or importance:



This symbol indicates NSF specific instructions.



This symbol represents a link to an important reference material.

*

This symbol represents a required field

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5. REFERENCED DOCUMENTS

5.1 NSF Grant Proposal Guide (GPG)

The GPG provides guidance for the preparation of applications for submission to NSF via use of the FastLane System. The GPG includes detailed application preparation instructions and information about NSF's application processing and review process. It also includes information about withdrawals, returns and declinations. Where appropriate, sections of the GPG have been incorporated by reference into this application guide.



NSF Grant Proposal Guide:

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg

5.2 Grants.gov Applicant User Guide

The Grants.gov Applicant User Guide is a comprehensive reference to information about Grants.gov. Applicants can download the User Guide as a PDF document.



Grants.gov Applicant User Guide:

http://www.grants.gov/assets/ApplicantUserGuide.pdf

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II. GENERAL INSTRUCTIONS FOR SUBMISSION VIA GRANTS.GOV

1. REGISTRATION PROCESS

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any government grant on the Grants.gov website, including NSF grants.



Grants.gov Registration: http://www.grants.gov/applicants/get_registered.jsp

2. SOFTWARE REQUIREMENTS¹

2.1 Adobe Reader

In order to open, complete and submit an application package, applicants must download and install the latest version of Adobe Reader from the Grants.gov website. NSF strongly recommends that applicants download Adobe Reader directly from the Grants.gov website to ensure the use of the latest compatible version of Adobe Reader.

For minimum system requirements, download instructions, and help tips for using Adobe please see Grants.gov Help: http://www.grants.gov/help/help.jsp and the Grants.gov Applicant User Guide: http://www.grants.gov/assets/ApplicantUserGuide.pdf

¹NOTE: If the applicant has problems setting up software on their machine, the applicant may not have security permissions to install new programs on their system. If that is the case, they should contact the organization's system administrator.

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III. NSF-SPECIFIC INSTRUCTIONS FOR SUBMISSION VIA GRANTS.GOV

1. **NSF**'s IMPLEMENTATION OF GRANTS.GOV

Unless otherwise specified in an NSF solicitation, applications to NSF may be submitted via use of Grants.gov or the NSF FastLane System. Please note that simultaneously submitted collaborative applications must be submitted via FastLane as Grants.gov does not currently support this functionality.

Upon posting to Grants.gov, the application package will contain the appropriate Research and Related forms, NSF specific forms, and the NSF Grants.gov Application Guide.

2. COMPONENTS OF AN NSF APPLICATION

The documents listed in Table 1 are components of an NSF application. The documents identified as required must be submitted to NSF as part of the application. Detailed instructions for submitting both required and optional documents can be found on the page indicated in the last column of the table.

Table 1: Components of an NSF Application

Document	Required	Optional	Instructions
SF 424 (R&R) Cover Component	~		Page 20
Project/Performance Site Location(s)	~		Page 27
R&R Other Project Information	✓		Page 29
R&R Senior/Key Person Profile (Expanded)	✓		Page 34
R&R Personal Data	~		Page 40
R&R Funds Requested Budget	✓		Page 42
R&R Subaward Budget Attachment(s)		✓	Page 49
NSF Cover Page	~		Page 51
NSF Deviation Authorization		•	Page 53
NSF Suggested Reviewers		•	Page 53
NSF FastLane System Registration		~	Page 55

3. CONFORMANCE WITH APPLICATION PREPARATION REQUIREMENTS

It is imperative that all applications conform to these application preparation and submission instructions. All attachments to an application also must comply with NSF font, spacing and margin requirements (See GPG Chapter II.B.2.). Conformance with all preparation and submission instructions is required and will be strictly enforced unless a deviation had been approved in advance of application submission. Please note that NSF solicitations may establish additional requirements. Applications that do not comply with this requirement will not be inserted into NSF's FastLane system and therefore cannot be reviewed. See GPG Chapter IV.B., (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg) for additional information.

3.1 Portable Document Format (PDF)

NSF requires that applicants submit all attachments to applications to Grants.gov in Portable Document Format (PDF). Using PDF format allows applicants to preserve the formatting of their documents. In order to save a document as a PDF, the applicant will need to use PDF generator software. Applications with attachments in non-PDF format will not be inserted into FastLane and will require resubmission via Grants.gov by the applicant.

3.2 Creating PDF Files

NSF has published the following webpage that provides guidance on creating PDF files acceptable for submission to FastLane. This same guidance must be followed for all attachments submitted with the NSF application through Grants.gov.

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Creating PDF Files: https://www.fastlane.nsf.gov/documents/pdf create/pdfcreate 05a.jsp

Adobe Reader cannot produce PDF files. The applicant must use the Adobe Distiller component of Adobe Acrobat.

NOTE: DO NOT USE PDF Writer! To avoid problems with converting documents to PDF, download the FastLane Job Options file as described below.

3.2.1 Instructions for Non-Adobe Acrobat Users

Users without Adobe Acrobat may use the PDF Conversion Utility found within FastLane to convert non-PDF documents to PDF format. The utility can be accessed by **registered** FastLane users through either the Proposal Preparation or the Research Administration modules.

Accessing the FastLane PDF Conversion Utility through Proposal Preparation

- 1. Navigate to the NSF FastLane homepage: https://www.fastlane.nsf.gov/fastlane.jsp
- 2. Select the Proposals, Awards and Status module.
- 3. Log in using your appropriate FastLane log-in information.
- 4. On the Quick Links menu at the left of the screen, select Convert Files to PDF.
- 5. Enter the document location in the space provided, or click the Browse button to select the document to be converted to PDF format.
- 6. Select the Convert to PDF button. The PDF conversion process may take a few minutes depending on your file size. Upon completion of PDF conversion, the screen will indicate that your file has been successfully converted.
- 7. Select View PDF. The converted document appears in PDF format in Adobe Reader within your web browser.
- 8. Select the diskette icon to name and save your new PDF file locally to your computer's hard drive.

Accessing the FastLane PDF Conversion Utility through Research Administration

- 1. Click on the link https://www.fastlane.nsf.gov/researchadmin/
- 2. Log in using your appropriate FastLane log-in information.
- 3. On the Quick Links menu at the left of the screen, select Convert Files to PDF.
- 4. Enter the document location in the space provided, or click the Browse button to select the document to be converted to PDF format.
- 5. Select the Convert to PDF button. The PDF conversion process may take a few minutes depending on your file size. Upon completion of PDF conversion, the screen will indicate that your file has been successfully converted.
- 6. Select View PDF. The converted document appears in PDF format in Adobe Reader within your web browser.
- 7. Select the diskette icon to name and save your new PDF file locally to your computer's hard drive.

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3.2.2 Warnings and Rules

Failure to comply with the following warnings or adhere to NSF rules for PDF files may result in your application not being inserted into NSF's FastLane and the application missing the opportunity's deadline date!

Warnings

- DO NOT Use Adobe Acrobat PDFWriter
- DO NOT Use Blocked PDF Producers
 - DO NOT Use Adobe Acrobat Encryption or Security Settings

Rules

- Always Check Results
- Always Embed All Fonts
- Always Use Type 1 or True Type Fonts
- Note the Special Rules for TeX or LaTeX

DO NOT Use Adobe Acrobat PDFWriter

PDFWriter does not produce acceptable PDF files, except under very limited circumstances. This can lead to NSF program officers and reviewers seeing garbled and/or incomplete versions of a file. NSF recommends uploading one of the supported formats as identified in the Acceptable File Formats section on FastLane https://www.fastlane.nsf.gov/documents/pdf create/pdfcreate 04.jsp?page=0 To create and upload a PDF file, use Adobe Distiller (in the same package as PDFWriter) or Ghostscript version 6.5 or higher.

4. SUBMISSION OF SAME APPLICATION TO MULTIPLE AGENCIES

With the exception of the Biological Sciences Directorate policy specified below, concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review.

4.1 NSF Biological Sciences Directorate Policy

Research applications to the Biological Sciences Directorate, however, (not applications for conferences or workshops) cannot be duplicates of applications to any other Federal agency for simultaneous consideration. The only exceptions to this rule are: (1) when the applicants and program officers at relevant Federal agencies have previously agreed to joint review and possible joint funding of the application; or (2) applications for Principal Investigators (Pls) who are beginning investigators (individuals who have not been a Pl) or co-Principal Investigator (co-Pl) on a Federally funded award with the exception of doctoral dissertation, postdoctoral fellowship or research planning grants. For applicants who qualify under this latter exception, the box for "Beginning Investigator" must be checked on the NSF Grant Application Cover Page.

5. SUBMISSION FOR REVIEW BY MULTIPLE PROGRAMS WITHIN NSF

The same work/application cannot be funded twice. The submission of duplicate or substantially similar applications concurrently for review by more than one program without prior NSF approval may result in the return of the redundant applications. (See GPG Chapter IV.B. for further information.)

6. NEXT STEPS - POST SUBMISSION TO GRANTS.GOV

Until an application has been received and validated by NSF, the Authorized Representative (AR) may check the status of an application on Grants.gov. Grants.gov requires a user login and password.



Check Application Status: https://apply07.grants.gov/apply/checkApplStatus.faces

6.1 Grants.gov Contact Center

If the Authorized Representative (AR) has not received a confirmation message from Grants.gov within 48 hours of submission of the application, please contact:

Telephone: 1-800-518-4726 Email: support@grants.gov

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6.2 NSF IT Help Central

If the Authorized Representative (AR)² has not received a confirmation message from NSF within 60 hours of submission of the application, please contact:

Telephone: 1-800-673-6188 Email: <u>fastlane@nsf.gov</u>

6.3 Research.gov and the NSF FastLane System

Research.gov (<u>www.research.gov</u>) is a new initiative led by NSF that enables organizations to access grants management services and information for multiple agencies in one place.

FastLane is the NSF online website through which NSF interacts with researchers and potential researchers, reviewers, and research administrators and their organizations.



FastLane: https://www.fastlane.nsf.gov

For applications submitted through Grants.gov the applicant should use:

- Research.gov to check the status of an application after it has been received and validated by NSF. See Section 6.3.1, "Check the Status of an Application in Research.gov", below for more information;
- Fastlane to add or correct information in the application after submission via Grants.gov and a notification is received from NSF that the application has been inserted into FastLane. See Section 6.3.2, "Proposal File Update Post Submission" and Section 6.4, below for "Warning Messages" details.

6.3.1 Check the Status of an Application in Research.gov

After applicants receive an email notification from NSF, Research.gov should be used to check the status of an application.

Research.gov Proposal Status: To view the status of an application, log in to Research.gov (www.research.gov) with the same account information used to access FastLane (last name, NSF ID, and password).

6.3.2 Proposal File Update – Post Submission

Applications submitted through Grants.gov are considered official submissions to the Federal government. Applicants that wish to change or correct a previously submitted application must use the Proposal File Update³ module available in the NSF FastLane System as specified below.



FastLane Proposal File Update: https://www.fastlane.nsf.gov/jsp/homepage/proposals.jsp

A request for a file update automatically will be accepted if submitted **prior to:**

- the deadline date specified in a program solicitation;
- initiation of external peer review in cases when a target date is utilized; and
- initiation of external peer review in the case of an unsolicited application.

² Please note that the identified PI also will receive a confirmation message from NSF.

³ The module in FastLane that is used to update files is the Proposal File Update module. The term proposal is the same as an application.

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A request for a file update **after** the timeframes specified above will require acceptance by the cognizant NSF Program Officer. Such requests may be submitted only to correct a technical problem with the application (e.g., formatting or print problems). Changes in the content of the application should not be requested **after** the timeframes specified above. When a request is accepted, the proposed files or revisions to application attributes will immediately replace the existing files and become part of the official application.

PIs can access the Proposal File Update Module via the "Proposal Functions" section of FastLane. Authorized individuals in the organization's Sponsored Projects Office (or equivalent) can initiate or review requests for proposal file updates using the "Submit Proposals/Supplements/File Updates/Withdrawals" Module via the FastLane "Research Administration Functions."

NSF will consider only one request for a proposal file update per application at a time. It is anticipated that it will be a rare occurrence for more than one file update request to be submitted for a application.

6.4 Warning Messages

If an applicant receives a Warning Message email stating information needs to be added or corrected in the application, the applicant should carefully review each warning and make the necessary correction(s) as needed in the Proposal File Update module. See 6.3.2 Proposal File Update – Post Submission above for more information about file updates.

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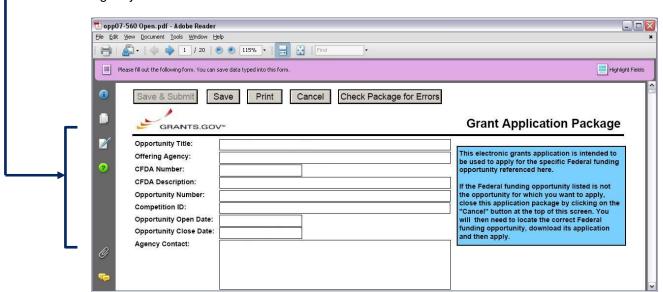
IV. GRANT APPLICATION PACKAGE INSTRUCTIONS

1. GRANT APPLICATION PACKAGE

1.1 Verify Grant Information

Verify that the information shown corresponds to the grant for which the applicant wishes to apply. Grants.gov will auto-populate the following information:

- Opportunity Title
- Offering Agency
- Catalog of Federal Domestic Assistance (CFDA) Number
- CFDA Description
 - Opportunity Number
- Competition ID
- Opportunity Open Date
- Opportunity Close Date
- Agency Contact



1.2 Enter a Name for the Application

Check the box indicating that the applicant will be submitting applications on his/her own behalf (if applicable). The check box will only be shown on funding opportunities that are open to individuals.

Enter a name for the application in the *Application Filing Name field (this is a required field). This name is for use solely by the applicant for you to track through the Grants.gov submission process. It is not used by the receiving agency.

I will be submitting applications on my behalf, and not on behalf of a company, state, local or torganization.	ribal government, academia, or other type of
* Application Filing Name:	

1.3 Open and Complete Mandatory Documents

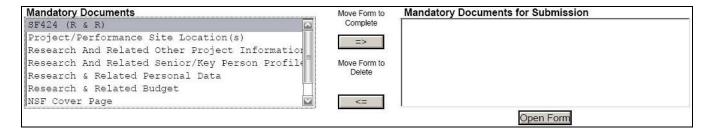
Open and complete all of the documents listed in the "Mandatory Documents" box. Complete the SF 424 (R&R) first. Data entered on the SF 424 (R&R) is populated into other mandatory and optional forms where possible.

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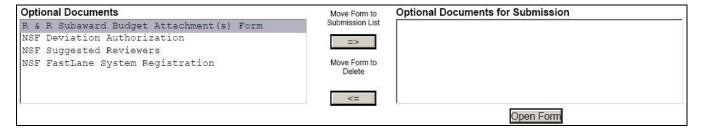


To open a form/document, first click the form/document to select it and then click on the "Move Form to Complete" => arrow. This moves the form/document to the "Mandatory Documents for Submission" box. Once it is moved to the "Mandatory Document for Submission" section you can select the form/document and click "Open Form" button to open the document.

To remove a form/document from the "Mandatory Documents for Submission" box, click the form/document name to select it, then click the "Move Form to Delete" <= arrow. This will return the form/document to the "Mandatory Documents" box. NOTE: EXECUTING THIS COMMAND MAY ELIMINATE THE DATA YOU POPULATED IN THE FIELDS.

1.4 Open and Complete Optional Documents

To open Optional documents use the process as described in section 1.3 "Open and Complete Mandatory Documents". Optional forms/documents can be used to provide additional support or supplemental information for the application or may be required for specific types of funding opportunities.



1.5 Navigating the Forms

Once all Mandatory and/or Optional forms are completed as part of the application and moved to the "Mandatory Documents for Submission" and/or the "Optional Documents for Submission" box(es), click the SF 424 (R&R) Cover Sheet to select it and then click the "Open Form" button. All forms/documents in the "Mandatory Documents for Submission" and/or the "Optional Documents for Submission" box(es) will open in Adobe Reader.

The applicant must complete the mandatory fields on each page of the form/document. Mandatory fields in Adobe Reader are highlighted in yellow with a red border.



To navigate to the next page of a form/document, locate the right arrow in the Adobe toolbar at the top of Adobe Reader and click on the arrow.



Once the arrow has been clicked, the applicant will be taken to the next page of the form/document where he/she may complete the rest of the form. The applicant may use this arrow to be taken to each subsequent form in the application.

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To go back to the previous page or previous form/document, simply click the left arrow on the Adobe toolbar.



Additionally, Adobe Reader allows scrolling from one form to the next by using the up and down arrows on the far right of Adobe Reader.

Once all the relevant fields have been completed, the applicant can return to the Grant Application Package screen and the list of Mandatory and Optional Documents by going to the first page in the application package or by clicking on the "Close Form" button when available. When a form/document is closed the completed data is captured in the application package but the form/document is not automatically saved. The application package must be saved from the Grant Application Package screen. More information on saving the application package is available in section 1.9, Saving the Application.

1.6 R&R Budget form Budget Periods

On the R&R Budget form/document, the applicant may enter up to 5 budget periods. To add a new budget period, the applicant must first complete Budget Period 1. The "Next Period" button on page 3 of the R&R Budget form/document will become active once Budget Period 1 is completed.

Close Form	Previous Next	Print Page
R	ESEARCH & RELATED BUDGE	T - SECTION F-K, BUDGET PERIOD 1 Next Period
* ORGANIZATIONAL DUNS:		
* Budget Type: X Project	Subaward/Consortium	
Enter name of Organization:	NSF Test Adobe December	

1.7 Attachments

Many of the forms/documents in the application package require the applicant to attach files. As stated in Chapter III, Section 3.1 above, "Portable Document Format (PDF)", NSF requires that all attachments must be submitted in PDF format.

To attach a PDF file to the forms/documents in the application package, only use the attachment buttons found on the form. Do not use the Adobe attachment function through the Adobe menu or Adobe icon.

For more information on adding attachments to the application package using Adobe forms, please see the Grants.gov Applicant User Guide: http://www.grants.gov/assets/ApplicantUserGuide.pdf

The R&R Subaward Budget Attachment(s) Form allows the applicant to attach additional Adobe forms. Chapter V, Section 8 of this Guide provides detailed instructions for the navigation of this form.

1.8 Displaying Help Tips

To display a Help Tip in Adobe Reader, hover or place the cursor over the field in question. Fields that are prepopulated by Grants.gov are display-only fields and no Help Tip is available. In addition, Help Tips are not available for buttons that are grayed out.

1.9 Saving the Application

The "Save" button only appears on the Grant Application Package screen. It is recommended that after the applicant completes each form/document that he/she go to the first page of the application package, or click on the "Close Form" button when available, then save the application package by clicking on the "Save" button at the top of the Grant Application Package Screen. It is important to note that the application package will be saved to

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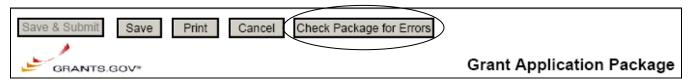
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the last active directory on the applicant's computer. Therefore, the applicant should save the application package to his/her hard drive where it can easily be located. The applicant may save the application package at any time and should save the application package with the same file name each time.

1.10 Check Package for Errors

To initiate the Grants.gov edit check process, simply click on the "Check Package for Errors" button at the top of the screen on the first page of the application package.



If all fields pass validation checks, a message box is shown saying "Validation Passed". If the application fails a validation check, the applicant must fix the error(s) and check the package for errors again. All errors are displayed one at a time.



Applicants are advised that no checks against NSF-specific business rules will take place at this time.

1.11 Submitting the Application

The AR must open the application in Adobe Viewer then press the "Save & Submit" button. Applications can be completed in their entirety offline; however, to submit an application you must be connected to the internet. To submit the application:

- 1. Browse to the physical location where the application file is located on your hard disk.
- 2. Double-click the application.
- 3. The application will open in Adobe Reader. This may take a few moments. Please be patient.
- 4. Once the application is completely open, if the "Save & Submit" button is not active then click the "Save" button. If the application has passed the "Check Package for Errors" validation check, the application will be saved and the "Save & Submit" button will become active.
- 5. Click "Save & Submit". A window will display requiring the application to be saved one more time. Save the application.
- 6. A pop-up window is displayed with User Name and Password prompt.
- 7. Enter your AR User Name and Password.
- 8. Click **Login**.
- 9. A pop-up window is displayed that says "This document is trying to connect to the site: http://apply.grants.gov/services/LoginWS?wsdl. If you trust the site click 'Allow', otherwise click 'Block'."
- 10. Click on 'Allow' and select the checkbox next to 'Remember my Action...' This is a security warning from the Adobe Reader. Please note the URL shown in the window may be slightly different than what is listed here.
- 11. A pop-up window is displayed that asks "Do you wish to sign and submit this Application?"
- 12. Click the "Sign and Submit Application" button

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- 13. A Security Warning pop-up window is displayed that says "This document has accessed more than one site and might be trying to share data among different locations. This could be a privacy concern. Are you sure you want to continue?". Check the "Don't show this message again until this document is reopened" checkbox and click "Yes".
- 14. Upon successful submission of the application, a Confirmation document is displayed with the Grants.gov Tracking Number displayed on the second page. It is recommended that this document be saved and printed for your records.

Only the AR has the authority and user rights to Sign and Submit an application to Grants.gov.

Additional submission FAQs may be found at the Grants.gov website.



Grants.gov Submission FAQs: http://www.grants.gov/help/submit_application_faqs.jsp

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V. RESEARCH AND RELATED (R&R) FORMS AND INSTRUCTIONS

1. OVERVIEW

This section contains both the SF 424 (R&R) instructions, as well as any applicable NSF-specific instructions. The NSF-specific instructions are identified by the NSF logo. It is important that all applications conform to these SF 424 (R&R) General Instructions, and where specified, with the NSF-specific instructions. Conformance is required and will be strictly enforced unless a deviation has been approved in advance of submission. Applicants are advised that NSF may return without review applications that are not consistent with these instructions.

The NSF applicant is required to complete and submit the following SF 424 (R&R) forms as part of the application package:

- SF424 (R&R);
- Project/Performance Site Location(s);
- Research & Related Other Project Information;
- Research & Related Senior/Key Person Profile (Expanded);
- Research & Related Personal Data:
- Research & Related Funds Requested Budget

The following SF 424 (R&R) form is optional and only should be submitted when appropriate:

R & R Subaward Budget Attachment(s) Form

Detailed instructions for the completion of each of these forms are explained in the following sections.

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OMB Number: 4040-0001

2. SF 424 (R&R) (COVER SHEET)

SF 424 (R&R)	3. DATE RECEIVED BY STATE State Application Id
1. * TYPE OF SUBMISSION	4. s. Federal Identifier
Pre-application Application Changed/Corrected Applica	
2. DATE SUBMITTED Applicant Identifier	
STATE OF THE STATE	
6. APPLICANT INFORMATION	* Organizational DUNS:
*Legal Name:	
Department Division:	
* Street:	
Steet2	
*City: County	/ Pariet:
* State	Province:
*Country: USA: UNITED STATES	* ZIP / Postal Code:
Person to be contacted on matters involving this application	
Frefs: *First Name:	Middle Name:
* Lest Name:	Suffe:
*Phone Number: Fix Number:	
Email	37 798
8. * EMPLOYER IDENTIFICATION (EIN) or (TIN):	
7. * TYPE OF APPLICANT: Ple	age select one of the following
Other (Specify):	was a superior of
	Socially and Economically Disadvantaged
	mark appropriate box(ea).
THE STATE AND SALES AND SA	see Award B. Decrease Award C. Increase Dunation
Renewel Continuation Forvision E. Otte	or (specify)
* Is this application being submitted to other agencies? Yes No	What other Agencies?
* Is this application being submitted to other spencies? Yes No. 0. * NAME OF FEDERAL AGENCY: 10. 0	What other Agencies? CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:
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2.1 Enter a Type of Submission (Field 1 on the Form)

Check one of the Type of Submission boxes. If this submission is to change or correct a previously submitted "New" application, click the Changed/Corrected Application box and enter the Grants.gov tracking number in the Federal Identifier field. If this submission is to change or correct a "resubmission", "renewal", "continuation", or "revision" application, leave the Federal identifier field as previously filled with the existing identifier (e.g. Award number). Do NOT insert the Grants.gov tracking number in these cases.

For purposes of NSF, the term preliminary proposal is synonymous with pre-application. Preliminary proposals, when required, must be submitted via use of the NSF FastLane System. In addition, the box for

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"changed/corrected application" should not be used. Rather, applicants that wish to change or correct a previously submitted application should use the Proposal File Update module available in the NSF FastLane at https://www.fastlane.nsf.gov/. See Chapter III, Section 6.3.2, "Proposal File Update — Post Submission". Resubmissions, continuations or revisions also should not be used in Field 8 on the form. See Section 2.8, Select Type of Application (Field 8 on the Form).

2.2 Enter Date Submitted and Applicant Identifier (Field 2 on the Form)

Enter the date the application is submitted to the Federal agency (or State if applicable). Enter the applicant's control number (if applicable).

2.3 Enter Date Received by State (Field 3 on the Form)

Enter the date received by state (if applicable). Enter the state application identifier (if applicable).

2.4.a Federal Identifier (Field 4.a on the Form)

New project applications should leave this field blank, unless you are submitting a Changed/Corrected application. When submitting a changed/corrected "New" application, enter the Grants.gov tracking number. If this is a continuation, revision or renewal application, enter the assigned Federal Identifier number (for example, award number) even if submitting a changed/corrected application.

If a new, full application is being submitted that is related to a previously submitted pre-application, enter the NSF assigned pre-application number in the Federal Identifier field. If this application is a resubmission of an application that has been previously submitted, but was not funded, and is being resubmitted for new consideration, leave blank. NSF treats these submissions as new applications.

2.4.b Agency Routing Number (Field 4.b on the Form)

Enter the agency-assigned routing identifier per the agency-specific instructions. This is an optional field.



The NSF will not use this field for routing. This field should be left blank.

2.5 Enter Applicant Information (Field 5 on the Form)

Enter the DUNS or DUNS+4 number of the applicant organization. This field is required.

The legal name of the applicant "organization" should be entered under "Legal Name", unless the applicant is an individual.

In addition, applicants that are individuals also cannot enter information into the Organizational DUNS field.

Field Name	Input	
*Legal Name	Enter legal name of applicant, which will undertake the assistance activity, enter the complete address of the applicant (including county/parish and country), and name, telephone number, e-mail, and fax of the person to contact on matters related to this application. This field is required.	
Department	Enter the name of primary organizational department, service, laboratory, or equivalent level within the organization which will undertake the assistance activity.	
Division	Enter the name of primary organizational division, office, or major subdivision which will undertake the assistance activity.	
*Street 1	Enter first line of the street address for the applicant in "Street1" field. This field is required.	
Street 2	Enter second line of the street address for the applicant in "Street2" field. This field is optional.	
*City	Enter the city for address of applicant. This field is required.	
County/Parish	Enter the county/parish for address of applicant.	
*State	Enter the State where the applicant is located. This field is required if the applicant is located in the United States.	
Province	Enter the Province.	
*Zip Code	Enter the Postal Code (e.g., ZIP code) of applicant. This field is required if the applicant is located in the United States. This field is required if a State is selected; optional for Province.	
*Country	Select the country for the applicant address. This field is required.	

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Person to be contacted on matters involving this application:

Field Name	Input	
Prefix	Enter the prefix (e.g., Mr., Mrs., Rev.) for the person to contact on matters related to this application.	
*First Name	Enter first (given) name of the person to contact on matters related to this application. This field is required.	
Middle Name	Enter the middle name of the person to contact on matters related to this application.	
*Last Name	Enter the last (family) name of the person to contact on matters related to this application. This field is required.	
Suffix	Enter the suffix (e.g., Jr, Sr, PhD) for the name of the person to contact on matters related to this application.	
*Phone Number	Enter the daytime phone number for the person to contact on matters related to this application. This field is required.	
Fax Number	Enter the fax number for the person to contact on matters related to this application.	
Email	Enter the e-mail address for the person to contact on matters related to this application.	

2.6 Enter Employer Identification (EIN) or (TIN) (Field 6 on the Form)

Employer Identification (EIN) or (TIN) - Enter either TIN or EIN as assigned by the U.S. Internal Revenue Service. If your organization is not in the U.S., type 44-4444444. This is required information.

2.7 Enter Type of Applicant (Field 7 on the Form)

Type of Applicant - Select the appropriate applicant type code. This field is required. Complete only if "Other" is selected as the Type of Applicant.

If Small Business is selected as Type of Applicant, then note if the organization is Woman-owned and/or Socially and Economically Disadvantaged.

- **Woman Owned** Check if the applicant is a women-owned small business a small business that is at least 51% owned by a woman or women, who also control and operate it.
- **Socially and Economically Disadvantaged** Check if the applicant is a socially and economically disadvantaged small business, as determined by the U.S. Small Business Administration pursuant to section 8(a) of the Small Business Act U.S.C. 637(a).

2.8 Select Type of Application (Field 8 on the Form)

Select the type from the following list. Check only one.

- **New** An application that is being submitted to an agency for the first time.
- **Resubmission** An application that has been previously submitted, but was not funded, and is being resubmitted for new consideration.
- **Renewal** An application requesting additional funding for a period subsequent to that provided by a current award. A renewal application competes with all other applications and must be developed as fully as though the applicant is applying for the first time.
- **Continuation** A non-competing application for an additional funding/budget period within a previously approved project period.
- **Revision** An application that proposes a change in 1) the Federal Government's financial obligations or contingent liability from an existing obligation; or, 2) any other change in the terms and conditions of the existing award.

For purposes of NSF, the boxes for "Resubmission", "Continuation" and "Revision" will not be utilized and must not be checked. If a renewal application is being submitted, enter the assigned award number of the previously funded application in the Federal Identifier field (Field 4 on the Form.)

If Revision, mark the appropriate box(es)

- Increase Award
- Decrease Award
- Increase Duration
- Decrease Duration

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Other (specify)
 If "Other" is selected, please specify in space provided.

NSF will not be using the SF 424 (R&R) to: Increase Award, Decrease Award, Increase Duration or Decrease Duration, or perform other post award transactions, and therefore, these boxes should not be checked. Requests for supplemental funding should be submitted electronically via the Supplemental Funding Request module in the NSF FastLane at https://www.fastlane.nsf.gov.

* *Is this application being submitted to other agencies?* – Enter yes or no. If yes, enter the name(s) of other Agencies. This is required information.

2.9 Enter Name of Federal Agency (Field 9 on the Form)

* Name of Federal Agency - This is the name of the Federal agency from which assistance is being requested with this application. This information is pre-populated by Grants.gov.

2.10 Enter Catalog of Federal Domestic Assistance Number (Field 10 on the Form)

This is the Catalog of Federal Domestic Assistance Number of the program under which assistance is being requested. This information is pre-populated by Grants.gov

Number – Enter the number.

Title – Enter the title.

2.11 Enter Descriptive Title of Applicant's Project (Field 11 on the Form)

* **Descriptive Title of Applicant's Project** - Enter a brief descriptive title of the project. This is required information.

The title of the project must be brief, scientifically or technically valid, intelligible to a scientifically or technically literate reader, and suitable for use in the public press. NSF may edit the title of a project prior to making an award.

2.12 Enter Proposed Project (Field 12 on the Form)

- * Start Date Enter the proposed start date of the project. This field is required.
- *Ending Date Enter the proposed end date of the project. This field is required.

The proposed duration for which support is requested must be consistent with the nature and complexity of the proposed activity. Grants are normally awarded for up to three years but may be awarded for periods of up to five years. The Foundation encourages organizations to request awards for durations of three to five years when such durations are necessary for completion of the proposed work and when such durations are technically and managerially advantageous. Specification of a desired starting date for the project is important and helpful to NSF staff; however, requests for specific effective dates may not be met. Except in special situations, requested effective dates must allow at least six months for NSF review, processing and decision. Should unusual situations (e.g., a long lead time for procurement) create problems regarding the proposed effective date, the PI should consult his/her organization's sponsored projects office.

2.13 Enter Congressional District of Applicant (Field 13 on the Form)

* Applicant Congressional District - Enter the Congressional District in the format: 2 character State
Abbreviation - 3 character District Number. Examples: CA-005 for California's 5th district, CA-012 for California's
12th district. If outside the US, enter 00-000. To locate your congressional district, visit the Grants.gov website.
This field is required.

2.14 Enter Project Director/Principal Investigator Contact Information (Field 14 on the Form)

Field Name	Input
Prefix	Enter the prefix (e.g., Mr., Mrs., Rev.) for the name of the Project Director.
*First Name	Enter first name of the PD/PI. This field is required.
Middle Name	Enter the middle name of the Project Director.
*Last Name	Enter the last (family) name of the Project Director. This field is required.
Suffix	Enter the suffix (e.g., Jr, Sr, PhD) for the name of the PD/PI.

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Position/Title	Enter the title of the Project Director.
*Organization Name	Enter the name of organization for the PD/PI. This field is required.
Department	Enter the name of primary organizational department, service, laboratory, or equivalent level within the organization of the PD/PI.
Division Enter the name of primary organizational division, office, or major subdivision of the PD/PI.	
*Street 1	Enter first line of the street address for the PD/PI in the "Street1" field. This field is required.
Street 2	Enter second line of the street address for the PD/PI in "Street2" field. This field is optional.
*City	Enter the City for address of the PD/PI. This field is required.
County/Parish	Enter the county/parish for address of the PD/PI.
*State	Enter the State where the PD/PI is located. This field is required if the PD/PI is located in the United States.
Province	Enter the Province for PD/PI.
*Zip Code	Enter the Postal Code (e.g., ZIP code) of the PD/PI. This field is required if the PD/PI is located in the United States.
*Country	Select the country for the PD/PI address. This field is required.
*Phone Number	Enter the daytime phone number for the PD/PI. This field is required.
Fax Number	Enter the fax number for the PD/PI.
*Email	Enter the e-mail address for the PD/PI. This field is required.

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16. ESTIMATED PROJECT FUNDING	16. 15 APPLICATION SUBJECT TO REVIEW BY STATE EXECUT ORDER 12372 PROCESS?
a, Total Federal Funds Requested b, Total Non-Federal Funds	A YES THIS PREAPPLICATION APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 129 PROCESS FOR REVIEW ON
	DATE
c. Total Federal & Non-Federal Funds	b. ND PROGRAM IS NOT COVERED BY E.O. 12372: OR
d. Estimated Program Income	PROGRAM HAS NOT BEEN SELECTED BY STATE F
administrative penalities. (U.S. Code, Titi "1 agree " The det of certifications and annualises, or as for	bound also referre you may obtain that for contained on the senorum arrangement or agreesy apecific continuations.
18. SPLLL or other Explanatory Document	Add Attachment Delate Attachment View Attach
19. Authorized Representative	
Profic: First Name:	Middle Name:
*Last Name:	Suffic T
* Position/Title:	
* Organization:	
Department	Division
*Street1	Directors.
Steet2:	
* CRy:	County / Parish:
* State:	▼ Fro/ice:
*Country: USA: USD	TIED STATES 2IP/Postal Code
Garage day	
* Phone Number	Pay Number
* Phone Number:	Fax Number:
* Phone Number:	Pac Number
THE RESIDENCE OF THE PERSON OF	d Representative * Date Signed
* Enel	d Representative * Date Signed

2.15 Enter Estimated Project Funding (Field 15 on the Form)

Field Name	Input
* Total Federal Funds Requested	Enter total Federal funds requested for the entire project period. This is required information.
Total Non-Federal Funds	Enter total non-Federal funds requested for the entire project period. This is required information.
*Total Federal & Non- Federal Funds	Enter total estimated funds for the entire project period, including both Federal and non-Federal funds. This is required information.
*Estimated Program Income	Identify any Program Income estimated for this project period if applicable. This is required information.

Applicants are advised that funds entered in field 15.b., will be entered on Line M of the NSF budget when entered into the NSF FastLane System.

2.16 Is Application Subject to Review by State Executive Order 12372 Process? (Field 16 on the Form)

If yes, select "This pre-application/application was made available to the state executive order 12372 process for review on:" and enter the date. If the announcement indicates that the program is covered under Executive Order 12372, applicants should contact the State Single Point of Contact (SPOC) for Federal Executive Order 12372.

If No, check appropriate box.

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The Foundation's regulation on Intergovernmental Review of National Science Foundation Programs and Activities is published in 45 CFR Part 660.

2.17 Complete Certification (Field 17 on the Form)

Check "I agree" to provide the required certifications and assurances. This field is required.

Only a designated Authorized Representative of the Organization may submit the applicable certifications specified in GPG Chapter II.C.1.e. As defined in the NSF Proposal & Award Policies & Procedures Guide, Introduction, Section D, the Authorized Representative is the administrative official who on behalf of the applicant is empowered to make certifications and assurances and can commit the organization to the conduct of a project that NSF is being asked to support as well as adhere to various NSF policies and grant requirements.

2.18 SFLLL or other Explanatory Documentation (Field 18 on the Form)

If applicable, attach the SFLLL or other explanatory documentation per agency instructions.

2.19 Enter Authorized Representative (Field 19 on the Form)

Field Name	Input
Prefix	Enter the prefix (e.g., Mr., Mrs., Rev.) for the name of the Authorized Representative.
*First Name	Enter the first (given) name of the Authorized Representative. This field is required.
Middle Name	Enter the middle name of the Authorized Representative.
*Last Name	Enter the last (family) name of the Authorized Representative. This field is required.
Suffix	Enter the suffix (e.g., Jr, Sr, PhD) for the name of the Authorized Representative.
Position/Title	Enter the title of the Authorized Representative. This field is required.
Organization Name	Enter the name of organization for the Authorized Representative. This field is required.
Department	Enter the name of primary organizational department, service, laboratory, or equivalent level within the organization of the Authorized Representative.
Division	Enter the name of primary organizational division, office, or major subdivision of the Authorized Representative.
*Street 1	Enter first line of the street address for the Authorized Representative in the "Street1" field. This field is required.
Street 2	Enter second line of the street address for the Authorized Representative in the "Street2" field. This field is optional.
*City	Enter the city for the address of the Authorized Representative. This field is required.
County/Parish	Enter the county/parish for the address of the Authorized Representative.
*State	Enter the State where the Authorized Representative is located. This field is required if the Authorized Representative is located in the United States.
Province	Enter the Province for the Authorized Representative.
*Zip Code	Enter the Postal Code (e.g., ZIP code) of the Authorized Representative. This field is required if the Authorized Representative is located in the United States.
*Country	Select the country for the Authorized Representative address.
*Phone Number	Enter the daytime phone number for the Authorized Representative. This field is required.
Fax Number	Enter the fax number of the Authorized Representative.
*Email	Enter the email of the Authorized Representative. This is required information.
Signature of	It is the organization's responsibility to assure that only properly authorized individuals sign in this
Authorized	capacity and/or submit the application to Grants.gov. If this application is submitted through
Representative	Grants.gov, leave blank. If a hard copy is submitted, the AR must sign this block.
Date Signed	If this application is submitted through Grants.gov, the system will generate this date. If submitting a hard copy, enter the date the AR signed the application.

2.20 Enter Pre-Application (Field 20 on the Form)

If submitting a pre-application, provide a summary description of the project in accordance with the announcement and/or agency specific instructions and attach here.

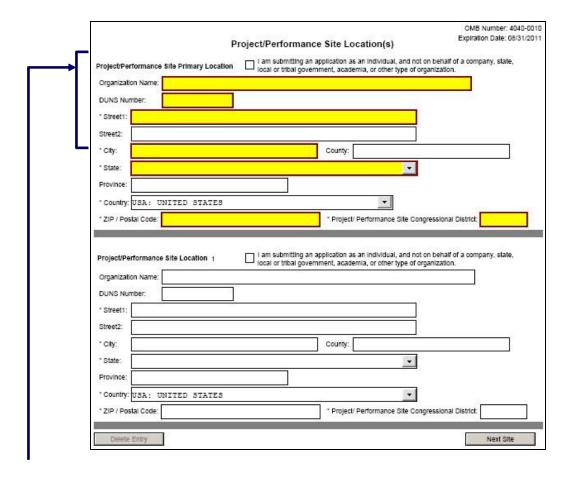
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Preliminary proposals, when required, must be submitted via use of the NSF FastLane System.

3. PROJECT/PERFORMANCE SITE LOCATIONS



3.1 Enter Project/Performance Site Primary Location

Indicate the organization name of the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the block(s) provided.

Project/Performance Site Primary Location:

Field Name	Input
Organization Name	Indicate the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the block(s) provided.
DUNS Number	Enter the DUNS number associated with the organization where the project will be performed.
*Street 1	Enter first line of the street address in "Street 1" field of the primary performance site location. This field is required.
Street 2	Enter second line of the street address in "Street 2" field for the primary performance site location. This field is optional.
*City	Enter the City for address of the primary performance site location. This field is required.
County/Parish	Select the county/parish for the performance site location.
*State	Enter the State where the primary performance site location is located. This field is required if the Project Performance Site is located in the United States.
Province	Enter the Province where the primary performance site location is located.
*Zip Code	Enter the Postal Code (e.g., ZIP code) of the primary performance site location. This field is required if the Project Performance Site is located in the United States.

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Country	Select the name of the country for the primary project performance site
*Project/Performance Site Congressional District	Enter the Congressional District in the format: 2 character State Abbreviation – 3 character District Number. Examples: CA-005 for California's 5 th district, CA-0012 for California's 12 th district. If all districts in a state are affected, enter "all" for the district number. Example: MD-all for all congressional districts in Maryland. If nationwide (all districts in all states), enter US-all. If the program/project is outside the US, enter 00-000. To locate your congressional district, visit the Grants.gov web site. Note it is likely that this field will be identical to the "Congressional Districts of Applicant" field provided elsewhere in this application.

Project/Performance Site Location 1 (Optional):

Field Name	Input
Organization Name	Indicate the site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the block(s) provided.
DUNS Number	Enter the DUNS number associated with the organization where the project will be performed.
*Street 1	Enter first line of the street address in "Street 1" field of the primary performance site location. This field is required.
Street 2	Enter second line of the street address in "Street 2" field for the primary performance site location. This field is optional.
*City	Enter the City for address of the primary performance site location. This field is required.
County/Parish	Select the county/parish for the performance site location.
*State	Enter the State or province where the primary performance site location is located. This field is required if the Project Performance Site is located in the United States.
Province	Enter the Province for the primary performance site location.
*Zip / Postal Code	Enter the Postal Code (e.g., ZIP code) of the primary performance site location. This field is required if the Project Performance Site is located in the United States.
Country	Select the name of the country for the project performance site
*Project/Performance Site Congressional District	Enter the Congressional District in the format: 2 character State Abbreviation – 3 character District Number. Examples: CA-005 for California's 5 th district, CA-0012 for California's 12 th district. If all districts in a state are affected, enter "all" for the district number. Example: MD-all for all congressional districts in Maryland. If nationwide (all districts in all states), enter US-all. If the program/project is outside the US, enter 00-000. To locate your congressional district, visit the Grants.gov web site. Note it is likely that this field will be identical to the "Congressional Districts of Applicant" field provided elsewhere in this application.

Add additional sites as necessary using the "Next Site" button.

For research performed at remote sites, "NA" should be typed in the following mandatory fields if they do not apply to the location: **Street 1, City, State, and Zip Code.** NSF only captures the Primary Location as the Performing Organization.

If the Organization Name field is left blank for the Performing Organization, then the Awardee Organization is also considered as the Performing Organization.

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4. R&R OTHER PROJECT INFORMATION

Γ	RESEARCH & RELATED Other Project Information
	1. * Are Human Subjects Involved? 1.a If YES to Human Subjects No
	Is the Project Exempt from Federal regulations? Yes No
	If yes, check appropriate exemption number.
	If no, is the IRB review Pending? Yes No
_	IRB Approval Date:
	Human Subject Assurance Number:
	2. * Are Vertebrate Animals Used? Yes No
	2.a. If YES to Vertebrate Animals
	Is the IACUC review Pending? Yes No
	IACUC Approval Date:
	Animal Welfare Assurance Number
	3. Is proprietary/privileged information included in the application?
	4.a. * Does this project have an actual or potential impact on the environment? Yes No
	4.b. If yes, please explain:
	4.c. If this project has an actual or potential impact on the environment, has an exemption been authorized or an environmental assessment (EA) or environmental impact statement (EIS) been performed?
	4.d. If yes, please explain:
	5. * Is the research performance site designated, or eligible to be designated, as a historic place? Yes No
	5.a. If yes, please explain:
	6. * Does this project involve activities outside of the United States or partnerships with international collaborators?
	6.a. If yes, identify countries:
	6.b. Optional Explanation:
	7. * Project Summary/Abstract Add Attachment Delete Attachment View Attachment
	8. * Project Narrative Add Attachment Delete Attachment View Attachment
	9. Bibliography & References Cited
	10. Facilities & Other Resources Delete Attachment Delete Attachment View Attachment
	11. Equipment Delete Attachment View Attachment View Attachment
I	12. Other Attachments Add Attachments Delete Attachments View Attachments

4.1 Are Human Subjects Involved? (Field 1 on the Form)

- Yes
- No

If activities involving human subjects are planned at any time during the proposed project at any performance site, check yes. Check yes, even if the proposed project is exempt from Regulations for the Protection of Human Subjects. If no, skip the rest of block 1. This field is required.

Projects involving research with human subjects must ensure that subjects are protected from research risks in conformance with the relevant federal policy known as the Common Rule (*Federal Policy for the Protection of Human Subjects, 45 CFR 690*). All projects involving human subjects must either (1) have approval from the organization's Institutional Review Board (IRB) before issuance of an NSF award or, (2) must affirm that the IRB or an appropriate knowledgeable authority previously designated by the organization (not the Principal Investigator) has declared the research exempt from IRB review in accordance with the applicable subsection, as established in section 101(b) of the Common Rule. The box for "Human Subjects" must be checked "yes" with the IRB approval date (if available) or exemption subsection from the Common Rule identified in the space provided. Check yes even if the proposed project is exempt from Regulations for the Protection of Human Subjects. If no, skip the remaining questions about Human Subjects.

If YES to Human Subjects:

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Is the Project Exempt from Federal regulations?

- Yes
- No

If yes, check appropriate exemption number – If human subject activities are exempt from Federal regulations, provide the exemption numbers corresponding to one or more of the exemption categories. The six categories of research that qualify for exemption from coverage by the regulations are defined in the Common Rule for the Protection of Human Subjects. http://ecfr.gpoaccess.gov/cgi/t/text/text-

idx?c=ecfr&sid=e8d83a14d728283c78ff7ac33d85cd57&tpl=/ecfrbrowse/Title45/45cfr690 main 02.tpl

- 1 2
- 3
- 4
- 5
- 6

If no, is the IRB review Pending?

- Yes
 - No

IRB Approval Date – Enter the latest Institutional Review Board (IRB) approval date (if available). Leave blank if Pending.

Human Subject Assurance Number – Enter the approved Federal Wide Assurance (FWA), Multiple Project Assurance (MPA), Single Project Assurance (SPA) Number or Cooperative Project Assurance Number that the applicant has on file with the Office for Human Research Protections, if available. If the applicant has a FWA number, enter the 8-digit number. Do not enter the FWA before the number.

4.2 Are Vertebrate Animals Used? (Field 2 on the Form)

This is required information. Check yes or no.

- Yes
- No

For applications involving the use of vertebrate animals, sufficient information must be provided within the 15-page project description to enable reviewers to evaluate the choice of species, number of animals to be used, and any necessary exposure of animals to discomfort, pain, or injury. Consistent with the requirements of the Animal Welfare Act [7 U.S.C. 2131 et seq.] and the regulations promulgated by the Secretary of Agriculture [9 CFR, 1.1-4.11], NSF requires that proposed projects involving use of any vertebrate animal for research or education be approved by the submitting organization's Institutional Animal Care and Use Committee (IACUC) before an award can be made. For this approval to be accepted by NSF, the organization must have a current Institutional Animal Welfare Assurance established with the Public Health Service (PHS).

If the organization does not have such an Assurance in place, then approval of the project by the IACUC of an organization with a current PHS Assurance will be acceptable, if the IACUC agrees to provide the required oversight of facilities and activities during the award. In any case, IACUC approval must be received prior to an award. Questions regarding this requirement should be directed to the cognizant NSF Program Officer.

If activities involving vertebrate animals are planned at any time during the proposed project at any performance site, check yes. If no, skip the remaining questions about Vertebrate Subjects.

If YES to Vertebrate Subjects:

Is the IACUC review Pending? Check yes or no.

- Yes
- No

IACUC Approval Date – Enter the latest Institutional Animal Care and Use Committee (IACUC) approval date (if available). Leave blank if Pending.

Animal Welfare Assurance Number - Enter the Federally approved assurance number, if available.

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4.3 Is Proprietary/Privileged Information Included in the Application? (Field 3 on the Form)

This is required information. Check yes or no.

- Yes
- No

Patentable ideas, trade secrets, privileged or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in applications only when such information is necessary to convey an understanding of the proposed project. If the application includes such information, check yes and clearly mark each line or paragraph on the pages containing the proprietary/privileged information with a legend similar to - "The following contains proprietary/privileged information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation."

Such information also may be included as a separate statement. If this method is used, the statement must be submitted electronically as a single-copy document and attached in Block 6 of the National Science Foundation Grant Application Cover Page. While NSF will make every effort to prevent unauthorized access to such material, the Foundation is not responsible or in any way liable for the release of such material. (See also GPG Chapter III.G.)

4.4 Does this Project Have an Actual or Potential Impact on the Environment? (Field 4 on the Form)

This is required information. Check yes or no.

- Yes
- No

If yes, please explain – Enter an explanation for the actual or potential impact on the environment.

If this project has an actual or potential impact on the environment, has an exemption been authorized or an environmental assessment (EA) or environmental impact statement (EIS) been performed? - Check yes or no.

- **Yes** Indicate whether an exemption has been authorized or an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) has been performed.
- **No** Indicate whether an exemption has been authorized or an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) has been performed. Click here for no. You must answer question 4a before this one.

If yes, please explain – Provide an explanation here or attach a file at block 11 "Other Attachments". If there is an attachment, please enter "Please see attached".

4.5 Is the research performance site designated, or eligible to be designated, as a historic place? (Field 5 on the Form)

This is required information. Check yes or no.

- Yes
- No

4.6 Does this Project Involve Activities Outside the U.S. or Partnership with International Collaborators? (Field 6 on the Form)

This is required information. Check yes or no.

- Yes
- No

If yes, identify countries – Enter the countries with which international cooperative activities are involved. *Optional Explanation* – Enter an explanation for involvement with outside entities (optional).

4.7 Attach Project Summary/Abstract (Field 7 on the Form)

The Project Summary must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained description of the project and should contain a statement of objectives and methods to be employed. It should be informative to other persons working in the same or related fields and insofar as possible, understandable to a scientifically or technically literate lay reader. This Summary must not include any proprietary/confidential information. To attach a Project Summary/Abstract, click "Add Attachment".

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The Project Summary must not be more than one page in length and must be suitable for publication. It must clearly address in separate statements (within the one-page summary): (1) the intellectual merit of the proposed activity; and (2) the broader impacts resulting from the proposed activity. (See Chapter III.A. of the GPG for further descriptive information on the NSF merit review criteria.) It should be informative to other persons working in the same or related fields and, insofar as possible, understandable to a scientifically or technically literate lay reader. Applications that do not separately address both merit review criteria within the one page Project Summary will be returned without review.

4. 8 Attach Project Narrative (Field 8 on the Form)

Provide Project Narrative in accordance with the announcement and/or agency-specific instructions. To attach a Project Narrative, click "Add Attachment".

The Project Narrative (referred to as the Project Description in the GPG) including the Results from Prior NSF Support must not exceed 15 pages, and must be prepared in accordance with the guidelines specified in GPG Chapter II.C.2.d.

4.9 Attach Bibliography & References Cited (Field 9 on the Form)

Provide a bibliography of any references cited in the Project Narrative. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. Include only bibliographic citations. Proposers should be especially careful to follow scholarly practices in providing citations for source materials relied upon when preparing any section of the application. Please click the add attachment button to the right of this field to complete this entry.

If the applicant has a Website address readily available, that information also should be included in the citation. It is not NSF's intent, however, to place an undue burden on applicants to search for the URL of every referenced publication. Therefore, inclusion of a Website address is optional. An application that includes reference citation(s) that do not specify a URL address is not considered to be in violation of NSF application preparation guidelines and the application will still be reviewed.

4.10 Attach Documentation for Facilities & Other Resources (Field 10 on the Form)

This information is used to assess the capability of the organizational resources available to perform the effort proposed. Identify the facilities to be used (Laboratory, Animal, Computer, Office, Clinical and Other). If appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Provide any information describing the Other Resources available to the project (e.g., machine shop, electronic shop) and the extent to which they would be available to the project. To attach a document for Facilities and Other Resources, click "Add Attachment".

4.11 Attach Equipment Documentation (Field 11 on the Form)

List major items of equipment already available for this project and, if appropriate identify location and pertinent capabilities. To attach a document for Equipment, click "Add Attachment".

4.12 Add Other Attachments (Field 12 on the Form)

Attach file(s) using the appropriate buttons.

Except as specified in GPG Chapter II.C.2.j, special information and supplementary documentation must be included as part of the project description (or part of the budget justification), if it is relevant to determining the quality of the proposed work. The categories of information identified in GPG Chapter II.C.2.j, are not considered part of the 15-page project description limitation. This Special Information and Supplementary Documentation section also is not considered an appendix. Specific guidance on the need for additional documentation may be obtained from the organization's sponsored projects office or in the references cited in GPG Chapter II.C.2.j.

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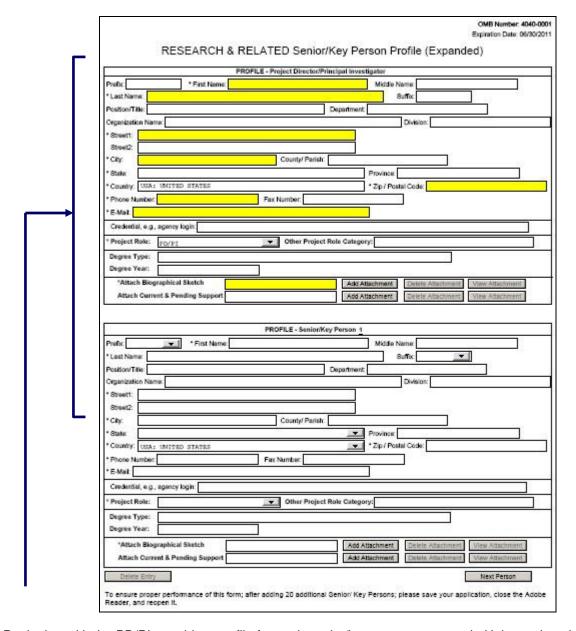
• Important note to applicants: Each application that requests funding to support **postdoctoral researchers** must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. In no more than one page, the mentoring plan must describe the mentoring that will be provided to all postdoctoral researchers supported by the project, irrespective of whether they reside at the submitting organization, any subawardee organization, or at any organization participating in a simultaneously submitted collaborative project. For purposes of meeting the mentoring requirement, simultaneously submitted collaborative applications, and, collaborative applications that include subawards, constitute a single unified project. Therefore, only one mentoring plan may be submitted for the entire project. Applicants are advised that the mentoring plan may not be used to circumvent the 15-page project description limitation. See GPG Chapter II.D.4 for additional information on collaborative applications.

Examples of mentoring activities include, but are not limited to: career counseling; training in preparation of grant applications, publications and presentations; guidance on ways to improve teaching and mentoring skills; guidance on how to effectively collaborate with researchers from diverse backgrounds and disciplinary areas; and training in responsible professional practices. The proposed mentoring activities will be evaluated as part of the merit review process under the Foundation's broader impacts merit review criterion. Applications that include funding to support postdoctoral researchers, and, do not include the requisite mentoring plan will be returned without review (see GPG Chapter IV.B.)

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5. R&R SENIOR/KEY PERSON PROFILE (EXPANDED)



Beginning with the PD/PI, provide a profile for each senior/key person proposed. Unless otherwise specified in an agency announcement, Senior/Key Personnel are defined as all individuals who contribute in a substantive, measurable way to the scientific development or execution of the project, whether or not salaries are requested. Consultants should be included if they meet this definition.



Definitions of categories of personnel are contained in GPG Chapter II, Exhibit II-7.

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5.1 Enter Profile – Project Director/Principal Investigator (PD/PI)

Field Name	Input
Prefix	Pre-populated from the SF 424 (R&R). The prefix (e.g., Mr., Mrs., Rev.) for the name of the Project Director.
*First Name	Pre-populated from the SF 424 (R&R). The first (given) name of the Project Director. This field is required.
Middle Name	Pre-populated from the SF 424 (R&R). The middle name of the Project Director.
*Last Name	Pre-populated from the SF 424 (R&R). The last (family) name of the Project Director. This field is required.
Suffix	Pre-populated from the SF 424 (R&R). The suffix (e.g., Jr, Sr, PhD) for the name of the Project Director.
Position/Title	Enter the position/title of the PD/PI. Pre-populated from the SF 424(R&R).
Department	Pre-populated from the SF 424 (R&R). The title of the Department.
Organization Name	Pre-populated from the SF 424 (R&R). The name of organization of the PD/PI.
Division	Pre-populated from the SF 424 (R&R). The name of primary organizational division, office, or major subdivision of the PD/PI.
*Street 1	Pre-populated from the SF 424 (R&R). The first line of the street address for the Project Director in the "Street 1" field. This field is required.
Street 2	Pre-populated from the SF 424 (R&R). The second line of the street address for the Project Director in the "Street 2" field. This field is optional.
*City	Pre-populated from the SF 424 (R&R). The city for address of Project Director. This field is required.
County/Parish	Pre-populated from the SF 424 (R&R). The county/parish for address of Project Director.
*State	Pre-populated from the SF 424 (R&R). The state where the Project Director is located. This field is required if the Project Director is located in the United States.
Province	Pre-populated from the SF 424 (R&R). The Province where the Project Director is located.
*Zip Code	Pre-populated from the SF 424 (R&R). The postal Code (e.g., ZIP code) of Project Director. This field is required if the Project Director is located in the United States.
*Country	Pre-populated from the SF 424 (R&R). The country for the Project Director address. This field is required.
*Phone Number	Pre-populated from the SF 424 (R&R). The daytime phone number for the Project Director. This field is required.
Fax Number	Pre-populated from the SF 424 (R&R). The fax number for the Project Director.
Email	Pre-populated from the SF 424 (R&R). The e-mail address for the Project Director. This field is required for Project Director.
Credential, e.g.,	If the application is being submitted to an agency (e.g. NIH) where the PD/PI has an established
agency login	personal profile, enter the agency ID. If not, leave blank.
*Project Role	Use "Other" if a category is not listed in the pick list. This field is required.
Other Project Role Category	Complete if "Other Professional" or "Other" has been selected as a project role; e.g., Engineer, Chemist.
Degree Type	Enter the highest academic or professional degree or other credentials (e.g., RN).
Degree Year	Enter the year the highest degree or other credential was obtained.

If the PD/PI is already registered in the NSF FastLane system, enter the NSF ID for the PD/PI in the "Credential, e.g., agency login" field.



For the Degree Type, enter the abbreviation for the degree type using the table in Section 5.11 below.

5.2 Attach Biographical Sketch

Provide a biographical sketch for the PD/PI. Recommended information includes: Education and Training, Research and Professional Experience, Collaborators and Affiliations (for conflicts of interest), Publications and Synergistic Activities. Save the information in a single file and attach here. This field is required.

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A biographical sketch (limited to two pages) is required for the individual identified as the PD/PI. The information must be provided **in the order and format** established in GPG Chapter II.C.2.f.

5.3 Attach Current and Pending Support

Provide a list of all current and pending support for the PD/PI (even if they receive no salary support from the project(s)) for ongoing projects and pending applications. Show the total award amount for the entire award period (including indirect costs) as well as the number of person-months per year to be devoted to the project by the senior/key person, regardless of source of support. Concurrent submission of a application to other organizations will not prejudice its review.

With regard to the statement above that "Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review," please note the Biological Sciences Directorate Policy specified in Chapter III, Section 4.1 of this Guide.

5.4 Enter Profile – Senior/Key Person(s)

Beginning with Senior/Key Person 1, provide a profile for each senior/key person proposed.

Field Name	Input
Prefix	Enter the prefix (e.g., Mr., Mrs., Rev.) for the name of the Senior/Key Person.
*First Name	Enter first (given) name of the Senior/Key Person. This field is required.
Middle Name	Enter the middle name of the senior/key person.
*Last Name	Enter the last (family) name of the Senior/Key Person. This field is required.
Suffix	Enter the suffix (e.g., Jr, Sr, PhD) for the name of the Senior/Key Person.
Position/Title	Enter the title of the Senior/Key Person.
Department	Enter the name of the primary organizational department, service, laboratory, or equivalent level within the organization of the Senior/Key Person.
Organization Name	Enter the name of the organization of the Senior/Key Person.
Division	Enter the name of primary organizational division, office, or major subdivision of the Senior/Key Person.
*Street 1	Enter first line of the street address for the Senior/Key Person in the "Street 1" field. This field is required.
Street 2	Enter second line of the street address for the Senior/Key Person in the "Street 2" field. This field is optional.
*City	Enter the city for address of Senior/Key Person. This field is required.
County/Parish	Enter the county/parish for address of Senior/Key Person.
*State	Enter the State where the Senior/Key Person is located. This field is required if the Senior/Key Person is located in the United States.
Province	Enter the Province where Senior/Key Person is located.
*Zip Code	Enter the Postal Code (e.g., ZIP code) of Senior/Key Person. This field is required if the Senior/Key Person is located in the United States.
*Country	Select the country for the Senior/Key Person address.
*Phone Number	Enter the daytime phone number for the Senior/Key Person. This field is required.
Fax Number	Enter the fax number of the senior/key person.
Email	Enter the e-mail address for the Senior/Key Person. This field is required for the Senior/Key Person.
Credential, e.g.,	If the application is being submitted to an agency (e.g. NIH) where the senior/key person has an
agency login	established personal profile, enter the agency ID. If not, leave blank.
Project Role	Select one. Use "Other" if a category is not listed in the pick list. This field is required.
Other Project Role	Complete if "Other Professional" or "Other" has been selected as a project role; e.g., Engineer,
Category	Chemist.
Degree Type	Enter the highest academic or professional degree or other credentials (e.g., RN).
Degree Year	Enter the year the highest degree or other credential was obtained.

If a Senior/Key Person is already registered in the NSF FastLane system, enter the NSF ID for that Senior/Key Person in the "Credential, e.g., agency login" field.

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For the Degree Type, enter the abbreviation for the degree type using the table in Section 5.11 below.

5.5 Attach Biographical Sketch

Provide a biographical sketch for each senior/key person. Recommended information includes - Education and Training, Research and Professional Experience, Collaborators and Affiliations (for conflicts of interest), Publications and Synergistic Activities. Save the information in a single file and attach. This is required information.

A biographical sketch (limited to two pages) is required for each individual identified as senior project personnel. The information must be provided in the order and format established in GPG Chapter II.C.2.f.

5.6 Attach Current and Pending Support

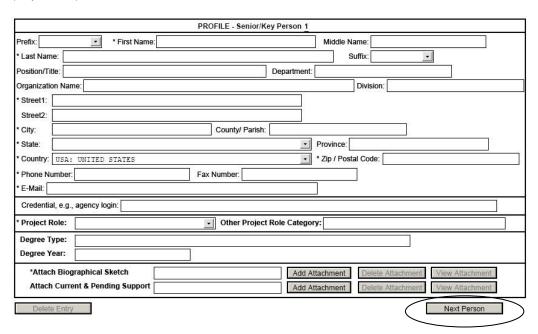
Provide a list of all current and pending support for each senior/key person (even if they receive no salary support from the project(s)) for ongoing projects and pending applications. Show the total award amount for the entire award period (including indirect costs) as well as the number of person-months per year to be devoted to the project by the senior/key person, regardless of source of support. Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review.

With regard to the statement above that "Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review," please note the Biological Sciences Directorate Policy specified Chapter III. Section 4.1 of this Guide.

5.7 Enter Additional Senior/Key Person Profile(s)

Once a profile is entered for senior/key person 1, the applicant may enter up to thirty nine additional senior/key person profiles on the R&R Senior/Key Person Profile (Expanded) form/document.

To enter additional senior/key person profiles, select the "Next Person" button on the R&R Senior/Key Person (Expanded) form/document.



This will display "Profile - Senior/Key Person 2". Follow the instructions above to enter additional profiles (up to 39 people maximum).

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Applications submitted to NSF may identify a **maximum of four co-Principal Investigators**. In cases where applications are submitted that include more than 4 co-Pls, NSF <u>only will use the first 4 co-Pls entered</u> on this form. Any person identified as a co-Pl after the first 4 co-Pls listed will have their role changed to "Senior Key Person" in NSF's FastLane system.

5.8 Attach Additional Senior Key Person Profiles

If more than 40 senior/key person profiles are proposed, provide the information requested in a separate file and attach here.

5.9 Attach Additional Biographical Sketch(es) (Senior Key Person)

Provide a biographical sketch for each senior/key person. Recommended information includes: Education and Training, Research and Professional Experience, Collaborators and Affiliations (for conflicts of interest), Publications and Synergistic Activities. Save the information in a single file and attach here.

A biographical sketch (limited to two pages) is required for each individual identified as senior project personnel. The information must be provided in the order and format established in GPG Chapter II.C.2.f.

5.10 Attach Additional Current and Pending Support(s)

Provide a list of all current and pending support for the PI and each senior/key person (even if they receive no salary support from the projects(s)) for ongoing projects and pending applications. Show the total award amount for the entire award period (including indirect costs) as well as the number of person-months per year to be devoted to the project by the senior/key person, regardless of source of support. Concurrent submission of a application to other organizations will not prejudice its review.

With regard to the statement above that "Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review," please note the Biological Sciences Directorate Policy specified Chapter III, Section 4.1 of this Guide.

5.11 Full listing of valid NSF degree types

The following table lists all of the valid NSF degree types.. When entering the highest degree type for the PD/PI or any of the additional senior/key persons on the R&R Senior/Key Person Profile (Expanded) form, refer to the following table. Locate the correct degree, and enter the abbreviation from the column on the left.

Abbreviation	Degree Type
AS	Associate in Science
BA	Bachelor of Arts
BComm	Bachelor of Commerce (Canada)
BEd	Bachelor of Education
BEng	Bachelor of Engineering
BS	Bachelor of Science
DA	Doctor of Arts
DC	Doctor of Chiropractics
DD	Doctor of Divinity
DDS	Doctor of Dental Science
DEng	Doctor of Engineering
DFA	Doctor of Fine Arts
DH	Doctor of Humanities
DHA	Doctor of Hospital Administration
DMin	Doctor of Ministry
DPA	Doctor of Public Administration
DSN	Doctorate of Science, in Nursing

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D) (1.4		
DVM	Doctor of Veterinary Medicine	
DVS	Doctor of Veterinary Science	
EdD	Doctor of Education	
HS	High School (or GED equivalent)	
JD	Jurum Doctor (Doctor of Laws)	
LLD	Legum Doctor (Doctor of Laws)	
LLM	Legum Magister (Master of Laws)	
MA	Master of Arts	
MAEd	Master of Arts, in Education	
MArch	Master of Architecture	
MBA	Master of Business Administration	
MD	Medical Doctor	
MDiv	Master of Divinity	
MDS	Master of Dental Science	
MEd	Master of Education	
MEE	Master of Electrical Engineering	
MEng	Master of Engineering	
MFA	Master of Fine Arts	
MIS	Master of Information Systems	
MLS	Master of Library Science	
MPA	Master of Public Administration	
MPd	Master of Pedagogy	
MPE	Master of Physical Education	
MPH	Master of Public Health	
MPhil	Master of Philosophy	
MS	Master of Science	
MSEd	Master of Science, in Education	
MST	Master of Sacred Theology	
MSW	Master of Social Work	
MTh	Master of Theology, in Religion	
PharD	Doctor of Pharmacy	
PhD	Doctor of Philosophy	
ScD	Doctor of Science	
ThD	Doctor of Theology, in Religion	
UKNW	No degree information specified	
- · · · · · ·	1.10 003100 1110111141011 00011100	

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6. R&R PERSONAL DATA

Г			OMB Number: Expiration Date:	
100000	RES	EARCH & RELATED F	PERSONAL DATA	
Pro	oject Director/Principal Inv	estigator and Co-Proj	ect Director(s)/Co-Principal Investigator(s	00
based on applicant informatik therefore provided	The Federal Government has a continuing commitment to monitor the operation of its review and award processes to identify and address any their based on gender, race, ethnicity, or disability of its proposed PDs/PIs and co-PDs/PIs. To gather information needed for this important task, the applicant should submit the requested information for each identified PD/PI and co-PDs/PIs with each proposal. Submission of the requested information is voluntary and is not a precondition of award. However, information not submitted will seriously undermine the statistical validity, and therefore the usefulness, of information received from others. Any individual not wishing to submit some or all the information should check the bo provided for this purpose. Upon receipt of the application, this form will be separated from the application. This form will not be duplicated, and it vide a part of the review process. Data will be confidential.			e and e box
→		Project Director/Principa	al Investigator	
Prefix:	* First Name:	Middle N	lame:	
* Last Na	ame:		Suffix:	
Gender:	•			
Race (ch	eck all that apply):	Ethnicity:	Disability Status (check all that apply):	
Americ	can Indian or Alaska Native		Hearing	
Asian			Visual	
Black	or African American		Mobility/Orthopedic Impairment	
Native	Hawallan or Other Pacific Islander		Other	
White			None	
☐ Do No	t Wish to Provide		Do Not Wish to Provide	
Citizensi	hlp:		10 1 - 10	
1				
			Next Person	on

The Federal Government has a continuing commitment to monitor the operation of its review and award processes to identify and address any inequities based on gender, race, ethnicity, or disability of its proposed PDs/PIs and co-PDs/PIs. To gather information needed for this important task, the applicant should submit the requested information for each identified PD/PI and co-PD/PI with each application. Submission of the requested information is voluntary and is not a precondition of award. However, information not submitted will seriously undermine the statistical validity, and therefore the usefulness of information received from others. Any individual not wishing to submit some or all the information should check the box provided for this purpose. Upon receipt of the application, this form will be separated from the application. This form will not be duplicated, and it will not be a part of the review process. Data will be confidential.

Collection of this information is authorized by and will be used in accordance with the NSF Act of 1950, as amended, 42 U.S.C. 1861, et seq. Demographic data allows NSF to gauge whether our programs and other opportunities in science and technology are fairly reaching and benefiting everyone regardless of demographic category; to ensure that those in under-represented groups have the same knowledge of and access to programs and other research and educational opportunities; and to assess involvement of international investigators in work supported by NSF. The information may be disclosed to government contractors, experts, volunteers, and researchers to complete assigned work; and to other government agencies in order to coordinate and assess programs. The information may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004).

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6.1 Enter Project Director/Principal Investigator

Field Name	Input
Prefix	Enter the prefix (e.g., Mr., Mrs., Rev.) for the name of the PD/PI. Pre-populated from SF 424 R&R.
*First Name	Enter the first (given) name of the PD/PI. This field is required. Pre-populated from SF 424 R&R.
Middle Name	Enter the middle name of the PD/PI. Pre-populated from SF 424 R&R.
*Last Name	Enter the last (family) name of the PD/PI. This field is required. Pre-populated from SF-424 R&R.
Suffix	Enter the suffix (e.g., Jr, Sr, PhD) for the name of the PD/PI. Pre-populated from SF 424 R&R.

Field Name	Input
Gender	Select the gender of the Project Director/Principal Investigator.
Race (check all that apply)	Choose one or more. American Indian or Alaska Native: A person having origins in any of the original peoples of North, Central, or South America, and who maintains tribal affiliation or community attachment. Asian: A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. (Note, individuals from the Philippine Islands have been recorded as Pacific Islanders in previous data collection strategies.) Black or African American: A person having origins in any of the black racial groups of Africa. Native Hawaiian or Other Pacific Islander: A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. White: A person having origins in any of the original peoples of Europe, the Middle East or North
Ethnicity	Africa. Do Not Wish to Provide Chose one: Hispanic or Latino - A person of Mexican, Puerto Rican, Cuban, South or Central American, or other Spanish culture or origin, regardless of race Non-Hispanic or Latino Do Not Wish to Provide
Disability Status (check all that apply)	Check one or more: Hearing Visual Mobility/Orthopedic Impairment Other None Do Not Wish to Provide
Citizenship	Chose one: US Citizen Permanent Resident Other non-US Citizen Do Not Wish to Provide

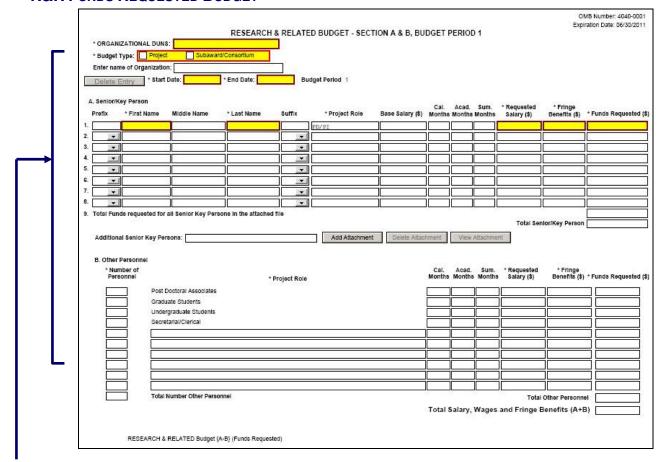
6.2 Enter Co-Project Director/co-Principal Investigator Information

To enter Co-Project Director/co-Principal Investigator information click on the "Next Person" button.

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7. R&R FUNDS REQUESTED BUDGET



7.1 Enter Budget Information

Applicants will be using the SF 424 R&R "Funds Requested" budget type to prepare their application for submission to NSF.

Field Name	Input
	Project, Subaward/Consortium: Check the appropriate block.
	Project: The budget requested for the primary applicant organization.
*Budget Type	Subaward/Consortium: The budget requested for subawardee/consortium organization(s). Note, separate budgets are required only for subawardee/consortium organizations that perform a substantive portion of the project.
	If creating a Subaward Budget, use the R&R Subaward Budget Attachment and attach as a separate file on the R&R Budget Attachment(s) form.
*Start Date	Pre-populated from the SF 424 (R&R). Enter the requested/proposed start date of each budget period. This field is required.
*End Date	Enter the requested/proposed end date of each budget period. This field is required.
Budget Period Identifies the specific budget period; e.g., 1, 2, 3, 4, 5. If submitting through Grants.gr will automatically generate a cumulative budget for the total project period. This field i	

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7.2 Enter Senior/Key Person (Field A on the Form)

This section identifies names of senior/key personnel. Each person identified in the senior/key person profile that is an employee of the applying organization must be listed in this section if funds are requested.

Enter the name (first name, middle initial, last name) for each senior/key personnel **exactly** as entered on other forms/documents in the application package. Do not enter a duplicate name for any senior/key personnel identified. If a duplicate name is entered in this section for any of the senior/key personnel, then the application will not be inserted into FastLane and therefore will not be reviewed. This section should also include such roles as co-PD/PI/PD, Postdoctoral Associates, and Other Professionals.

As a general policy, NSF recognizes that salaries of faculty members and other personnel associated directly with the project constitute appropriate direct costs and may be requested in proportion to the effort devoted to the project. NSF regards research as one of the normal functions of faculty members at institutions of higher education. Compensation for time normally spent on research within the term of appointment is deemed to be included within the faculty member's regular organizational salary. Grant funds may not be used to augment the total salary or rate of salary of faculty members during the period covered by the term of faculty appointment or to reimburse faculty members for consulting or other time in addition to a regular full-time organizational salary covering the same general period of employment. Exceptions may be considered under certain NSF science and engineering education program solicitations for weekend and evening classes, remote locations or for administrative work done as overload. If anticipated, any intent to provide salary compensation above the base salary should be disclosed in the budget justification and must be specifically approved by NSF in the award notice.

As a general policy, NSF limits salary compensation for senior project personnel to no more than two months of their regular salary in any one year. This limit includes salary compensation received **from all NSF-funded grants**. This effort must be documented in accordance with the applicable cost principles. If anticipated, any compensation for such personnel in excess of two months must be disclosed in the proposal budget, justified in the budget justification, and must be specifically approved by NSF in the award budget.

These same general principles apply to other types of non-academic organizations.

Field Name	Input	
Prefix	Select the prefix of the senior/key person.	
*First Name	Enter the first name of the senior/key person. This is required information.	
Middle Name	Enter the middle name of the senior/key person.	
*Last Name	Enter the last name of the senior/key person. This is required information.	
Suffix	Select the suffix of the senior/key person.	
*Project Role	Enter the project role of the senior/key person. This is required information.	
Raco Salary (\$)	Enter the annual compensation paid by the employer for each senior/key personnel. This includes all activities such as research, teaching, patient care, or other. The applicant may choose to leave this	
Base Salary (\$)	column blank.	
Cal. Months	Identify the number of calendar months devoted to the project.	
Acad. Months	Identify the number of academic months devoted to the project.	
Sum. Months	Identify the number of summer months devoted to the project	
*Requested Salary (\$)	Regardless of the number of months being devoted to the project, indicate only the amount of salary	
nequested Salary (\$)	being requested for this budget period for each senior/key person. This is required information.	
*Fringe Benefits (\$)	Enter the applicable fringe benefits, if any, for each senior/key person. This is required information.	

If the grantee's usual accounting practices provide that its contributions to employee benefits (social security, retirement, etc.) be treated as direct costs, NSF funds may be requested to fund fringe benefits as a direct cost.

Field Name Input

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*Funds Requested (\$)	Enter requested salary & fringe benefit for each senior/key person. This is required information.
Total Funds requested for all Senior Key Persons in the Attached File	Total Funds requested for all Senior Key Persons in the attached file.
Total Senior/Key Person	This total will auto-calculate.

Additional Senior Key Persons - If funds are requested for more than 8 Senior/Key Persons, include all pertinent budget information and attach as a file here. Enter the total funds requested for all additional senior/key persons in line 9 of Section A.

NSF policy permits an applicant organization to request that salary data on senior personnel not be released to persons outside the Government during the review process. If this option is exercised, such applications must be submitted via the NSF FastLane system in accordance with the instructions identified in GPG Chapter I.D.4.

7.3 Enter Other Personnel (Field B on the Form)

Field Name	Input	
*Number of Personnel	For each project role category, identify the number of personnel proposed. This is required information.	
*Project Role	For each project role category identify the number of personnel proposed.	
Cal. Months	Identify the number of calendar months devoted to the project.	
Acad. Months	Identify the number of academic months devoted to the project.	
Sum. Months	Identify the number of summer months devoted to the project	
*Requested Salary (\$)	Regardless of the number of months being devoted to the project, indicate only the amount of salary/wages being requested for each project role. This is required information.	
*Fringe Benefits (\$)	Enter applicable fringe benefits, if any, for this project role category. This is required information.	
*Funds Requested (\$)	Enter requested salary/wages & fringe benefits for each project role. This is required information.	
Total Number of Other Personnel	Enter Total Number of Other Personnel.	

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	Close Form RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 1 * ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/Consortium Enter name of Organization: Delete Entry * Start Date: Budget Period 1
	C. Equipment Description List items and dollar amount for each item exceeding \$5,000
	Equipment Item * Funds Requested (\$)
	1.
	2.
1 1	4.
	5.
	6.
	7.
	8.
	9.
	10.
	11. Total funds requested for all equipment listed in the attached file Total Equipment
	er seek of management and a seek of
	Additional Equipment: Delete Attachment View Attachment View Attachment
	D. Travel Funds Requested (\$)
	Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions)
	Foreign Travel Costs
	Total Travel Cost
	E. Participant/Trainee Support Costs Funds Requested (\$)
	Tuttion/Fees/Health Insurance
	2. Stipends
	3. Travel
	4. Subsistence
	5. Other
	Number of Participants/Trainees Total Participant/Trainee Support Costs
	RESEARCH & RELATED Budget (C-E) (Funds Requested)

7.4 Enter Equipment Description (Field C on the Form)

Equipment is defined as an item of property that has an acquisition cost of \$5,000 or more (unless the organization has established lower levels) and an expected service life of more than one year.

Equipment item - List each item of equipment separately and justify each in the budget justification section. Allowable items ordinarily will be limited to research equipment and apparatus not already available for the conduct of the work. General-purpose equipment, such as a personal computer, is not eligible for support unless primarily or exclusively used in the actual conduct of scientific research.

* Funds Requested (\$) - List the estimated cost of each item of equipment including shipping and any maintenance costs and agreements. Dollar amount for item should exceed \$5000.

Total funds requested for all equipment listed in the attached file - Total funds requested for all equipment listed in the attached file. Dollar amount for item should exceed \$5000.

Total Equipment - Total Funds requested for all equipment.

7.5 Enter Travel (Field D on the Form)

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions) Funds Requested (\$) – Identify the total funds requested for domestic travel. Domestic travel includes Canada, Mexico and US Possessions. In the budget justification section, include purpose, destination, dates of travel (if known) and

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number of individuals for each trip. If the dates of travel are not known, specify estimated length of trip (e.g., 3 days).

2. Foreign Travel Costs Funds Requested (\$) - Identify the total funds requested for foreign travel. Foreign travel includes any travel outside of North America and/or US Possessions. In the budget justification section, include purpose, destination, dates of travel (if known) and number of individuals for each trip. If the dates of travel are not known, specify estimated length of trip (e.g., 3 days).

All foreign travel must be justified in the budget justification. Travel support for dependents of key project personnel may be requested only when all of the following conditions apply:

- The individual is a key person who is essential to the research on a full-time basis;
- The individual's residence away from home and in a foreign country is for a continuous period of six months or more and is essential to the effective performance of the project; and
- The dependent's travel allowance is consistent with the policies of the organization administering the grant.

Total Travel Costs – Total Funds requested for all travel.

7.6 Enter Participant/Trainee Support Costs (Field E on the Form)

Participant costs are the costs associated with conference, workshop, or symposium attendees that are not employees of the applicant or a subawardee. Trainee costs are the costs associated with educational projects that support trainees (pre-college, college, graduate and post graduate). List total costs for each budget item and the number of participants/trainees. In the budget justification, identify the purpose of the conference/training, dates, and places and justify costs.

Generally, indirect costs (F&A) are not allowed on participant support costs. See GPG Chapter II.C.2.g.(viii) for additional information.

- 1. Tuition/Fees/Health Insurance List total funds requested for Participant/Trainee Tuition/Fees/Health Insurance.
- 2. Stipends List total funds requested for Participant/Trainee Stipends.
- **3. Travel** List total funds requested for Participant/Trainee Travel.
- **4. Subsistence** List total funds requested for Participant/Trainee Subsistence.
- **5. Other** Describe any other participant trainee funds requested.

Number of Participants/Trainees - List the total number of participants/trainees.

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7.7 Total Participant/Trainee Support Costs – Total Funds requested for all trainee costs.

	RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 1
	* ORGANIZATIONAL DUNS:
	* Budget Type: Project Subaward/Consortium
	Enter name of Organization:
	Delete Entry Start Date: * End Date: Budget Period 1
1	F. Other Direct Costs Funds Requested (\$)
	Materials and Supplies
	2. Publication Costs
	3. Consultant Services
	ADP/Computer Services
	Subawards/Consortium/Contractual Costs
	Equipment or Facility Rental/User Fees
	7. Alterations and Renovations
_	8.
	9.
	10.
	G. Direct Costs Funds Requested (\$) Total Direct Costs (A thru F)
	Total Billott South (A till a 1)
	H. Indirect Costs Indirect Cost Indirect Cost Indirect Cost Indirect Cost Sate (%) Base (\$) *Funds Requested (\$)
	1.
	2.
	3.
	4.
	Total Indirect Costs
1	Cognizant Federal Agency

7.8 Enter Other Direct Costs (Field F on the Form)

- 1. **Materials and Supplies** List total funds requested for materials & supplies. In the budget justification, indicate general categories such as glassware, chemicals, animal costs, including an amount for each category. Categories less than \$1,000 do not require itemization.
- 2. **Publication Costs** List the total publication funds requested. The application budget may request funds for the costs of documenting, preparing, publishing or otherwise making available to others the findings and products of the work conducted under the award. In the budget justification include supporting information.
- **3. Consultant Services** List the total costs for all consultant services. In the budget justification, identify each consultant, the services he/she will perform, total number of days, travel costs, and total estimated costs.

Anticipated consultant services must be justified and information furnished on each individual's expertise, primary organizational affiliation, normal daily compensation rate, and number of days of expected service. Consultants' travel costs, including subsistence, also may be included. If requested, the proposer must be able to justify that the proposed rate of pay is reasonable. Additional information on the charging of consultant costs to an NSF award is available in the NSF Award & Administration Guide (AAG), Chapter V.B.6.

- **4. ADP/Computer Services** List total funds requested for ADP/Computer Services. The cost of computer services, including computer-based retrieval of scientific, technical and education information may be requested. In the budget justification, include the established computer service rates at the proposing organization if applicable.
- 5. Subawards/Consortium/Contractual Costs List total funds requested for 1) all subaward/consortium organization(s) proposed for the project and 2) any other contractual costs proposed for the project.

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Except for the procurement of such items as commercially available supplies, materials, equipment or general support services allowable under the grant, no significant part of the research or substantive effort under an NSF grant may be contracted or otherwise transferred to another organization without prior NSF authorization.

- **6. Equipment or Facility Rental/User Fees** List total funds requested for Equipment or Facility Rental/Use Fees. In the budget justification, identify each rental user fee and justify.
- 7. Alterations and Renovations List total funds requested for Alterations & Renovations. In the budget justification, itemize, by category and justify the costs of alterations and renovations including repairs, painting, removal or installation of partitions, shielding, or air conditioning. Where applicable, provide the square footage and costs.

Total Other Direct Costs - This total will auto-calculate.

7.9 Verify Total Direct Costs (Field G on the Form)

Total Direct Costs (A-F) - Total Funds requested for all direct costs.

7.10 Enter Indirect Costs (Field H on the Form)

Indirect Cost Type - Indicate the type of base; e.g., Salary & Wages, Modified Total Direct Costs, Other (explain). Also indicate if Off-site. If more than one rate/base is involved, use separate lines for each. If the applicant does not have a current indirect rate(s) approved by a Federal agency, indicate, "None--will negotiate" and include information for a proposed rate. Use the budget justification if additional space is needed.

Indirect Cost Rate (%) - Indicate the most recent Indirect Cost rate(s) (also known as Facilities & Administrative Costs [F&A]) established with the cognizant Federal office, or in the case of for-profit organizations, the rate(s) established with the appropriate agency. If the applicant has a cognizant/ oversight agency and is selected for an award, the applicant must submit the indirect rate proposal to that office for approval. If the applicant does not have a cognizant/oversight agency, contact the awarding agency.

Indirect Cost Base - Enter the amount of the base for each indirect cost type.

* Funds Requested (\$) - Enter funds requested for each indirect cost type.

7.11 Verify Total Indirect Costs

Cognizant Federal Agency - Enter the name of the cognizant Federal Agency, name & phone number of the individual responsible for negotiating your rate. If no cognizant agency is known, enter "None".

Unless otherwise indicated in a specific program solicitation, it is NSF policy that grantees are entitled to reimbursement from grant funds for indirect costs (F&A) allocable to the NSF share of allowable direct costs of a project, except:

- grants to individuals;
- grants solely for the support of travel, equipment, construction of facilities, or doctoral dissertation research;
- grants in which NSF support is exclusively in the form of fellowships, traineeships or other fixed amounts such as cost-of-education allowances;
- participant support costs. However, an allowance for indirect costs associated with participant support costs may be established or negotiated in advance when circumstances indicate that the grantee could be expected to incur significant expenses in administering participant payments (other than salary or other direct expenses being reimbursed under the award) or;
- foreign grantees (unless the foreign grantee has a previously negotiated rate agreement with a US Federal agency that has a practice of negotiating rates with foreign entities).

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⊢[Total Direct and Indirect Costs Total Direct and Indirect Institutional Costs (G + H)	Funds Requested (\$)
	J. Fee	Funds Requested (\$)
	K. * Budget Justification (Only attach one file.)	Add Attachment Delete Attachment View Attachment

7.12 Verify Total Direct and Indirect Costs (Field I on the Form)

Total Direct and Indirect Institutional Cost (G +-H) - Total Funds requested for direct and indirect costs.

7.13 Enter Fee (Field J on the Form)

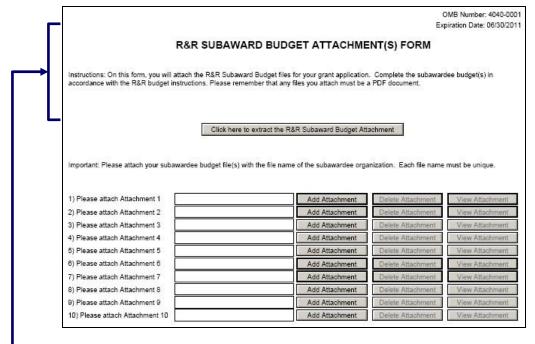
Generally, a fee is not allowed on a grant or cooperative agreement. Do not include a fee in the budget, unless the program announcement specifically allows the inclusion of a "fee" (e.g., SBIR/STTR). If a fee is allowable, enter the requested fee.

Inclusion of fees (profit) in a budget is allowable only if specifically authorized by an NSF program solicitation. However, NSF does not support inclusion of fees through Grants.gov submitted applications. To include fees in the budget, the applicant must either: (1) submit the application through Grants.gov then prepare a revised budget through the NSF FastLane system, or (2) submit the application directly through FastLane.

7.14 Enter Budget Justification (Field K on the Form)

Use the budget justification to provide the additional information requested in each budget category identified above and any other information the applicant wishes to submit to support the budget request. The following budget categories must be justified, where applicable: equipment, travel, participant/trainee support and other direct cost categories. Only one file may be attached.

8. R&R SUBAWARD BUDGET ATTACHMENT(S) FORM



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On this form/document, you may attach up to 10 R&R Subaward Budget files for your grant application. Complete the subawardee budget(s) in accordance with the R&R budget instructions. Please remember that any file(s) you attach must be a PDF document.

To extract or download, fill and attach each additional R&R Subaward Budget Attachment form/document, simply follow these steps:

1. On the R&R Subaward Budget Attachment form/document, press the "Click here to extract the R&R Subaward Budget Attachment" button to download the form.

Click here to extract the R&R Subaward Budget Attachment

- 2. Save the subawardee budget file(s) with the name of the subawardee organization. Each file name attached to the R&R Subaward Budget Attachment Form must be unique. When assigning a name to the file, please remember to give it the extension ".pdf" (for example, "My_Senior_Key1.pdf"). If you do not name your file with the ".pdf" extension you will be unable to open it later using your Adobe Reader software.
- 3. Open the new form that you have just saved in Adobe Reader.
- 4. Enter your Subawardee Organization information in this supplemental form. Complete the subawardee budget(s) in accordance with the R&R budget instructions.
- 5. When you have completed entering information in the supplemental form, save it and close it.
- 6. Return to the "R&R Subaward Budget Attachment(s)" Form.
- 7. Attach the saved supplemental form, which you just filled in, to one of the blocks provided on this "attachments" form.
- 8. Extract and attach additional R&R Budget Forms for the Subaward Organizations as necessary using the process outlined above. Please remember that the files you attach must be previously extracted R&R Budget forms. Attaching any other type of file may result in the inability to submit your application to Grants.gov.

Each Subaward Organization included on the R&R Subaward Budget Attachment(s) Form must currently be registered in NSF's FastLane System. If the Subaward Organization is not registered in FastLane, then the application will not be inserted into FastLane and therefore will not be reviewed.

Each Subaward Organization included on the R&R Subaward Budget Attachment(s) Form may only be associated with 15 budget periods. If the Subaward Organization is associated with 15 or more budget periods, then the application will not be inserted into FastLane and a confirmation email will not be sent.

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VI. NSF SPECIFIC FORMS AND INSTRUCTIONS

The NSF applicant is required to complete and submit the following form in conjunction with the SF 424 (R&R) forms included in this application package:

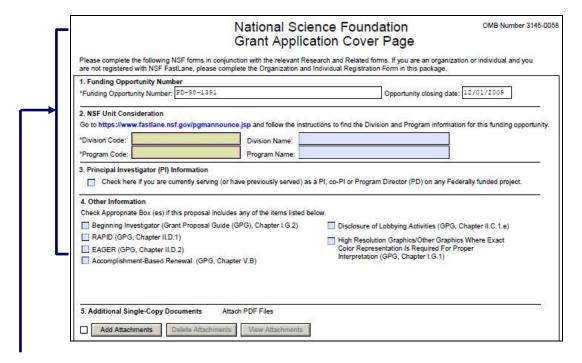
NSF Cover Page.

The following NSF-specific forms are optional and only should be submitted when appropriate:

- NSF Deviation Authorization;
- NSF Suggested Reviewers; and
- NSF FastLane System Registration.

Instructions for completing each of these forms follow.

1. NSF Cover Page



1.1 Verify Funding Opportunity Number (Field 1 on the Form)

* Funding Opportunity Number – This information is pre-populated by Grants.gov. Opportunity Closing Date – This information is pre-populated by Grants.gov.

1.2 Enter NSF Unit Consideration (Field 2 on the Form)

Indicate which NSF Unit should consider the application. To do that click on the URL in Block 2 and a browser window will open showing an NSF web page, https://www.fastlane.nsf.gov/pgmannounce.jsp. Follow the instructions on this web page to search by Funding Opportunity to identify the appropriate Division and Program for the programs accepting applications through Grants.gov. Copy the Division code and Program code into the form

- * Division Code Enter the NSF division code for this funding opportunity. This is required information.
- * **Program Code** Enter the NSF program code for this funding opportunity. This is required information.

Division Name – Enter the NSF division name for this funding opportunity.

Program Name - Enter the NSF program name for this funding opportunity.

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1.3 Enter Principal Investigator (PI) Information (Field 3 on the Form)

Check the box if currently serving (or have previously served) as PI, Co-PI or Program Director (PD) on any federally funded project.

1.4 Enter Other Information (Field 4 on the Form)

Check the appropriate box(es) if this application includes any of the items listed below:

Beginning Investigator (GPG Chapter I.G.2) – Check box if Beginning Investigator. **Note that this box applies only to Pls who are submitting applications to the Directorate for Biological Sciences.** See Chapter III, Section 4.1 of this Guide for further information.

Grants for Rapid Response Research (RAPID)(GPG Chapter II.D.1) – Check box if this application includes a request for Grants for Rapid Response Research.

Early-concept Grants for Exploratory Research (EAGER) (GPG Chapter II.D.2) – Check box if this application includes a request for Early-concept Grants for Exploratory Research.

Accomplishment-Based Renewal (GPG Chapter V.B) – Check box if this is an Accomplishment-Based Renewal. For more information on Accomplishment-Based Renewals, see GPG Chapter V.B. If an accomplishment-based-renewal is being submitted, applicants are reminded to enter the assigned award number of the previously funded application in the Federal field (Field 4 on the SF 424 (R&R) Cover Sheet). Disclosure of Lobbying Activities (GPG Chapter II.C.1.e) – Check box for Disclosure of Lobbying Activities. This certification is required for an award of a Federal contract, grant or cooperative agreement exceeding \$100,000 and for an award of a Federal loan or a commitment providing for the United States to insure or quarantee a loan exceeding \$150,000.

High Resolution Graphics/Other Graphics Where Exact Color Representation Is Required For Proper Interpretation (GPG Chapter I.G.1) — Detailed instructions for submission of applications that contain high-resolution graphics or other graphics where exact color representations are required for proper interpretation by the reviewer are available on the FastLane Website at https://www.fastlane.nsf.gov/fastlane.jsp.

1.5 Attach Additional Single-Copy Documents (Field 5 on the Form)

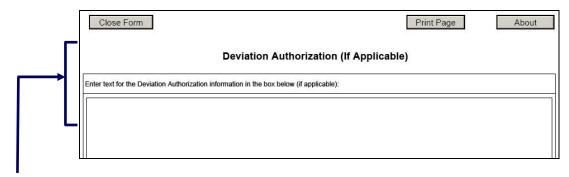
Attach PDF files for Additional Single-Copy Documents.

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2. **NSF DEVIATION AUTHORIZATION**



2.1 Enter Deviation Authorization (If Applicable)

It is important that all applications conform to the instructions provided in this Guide, and where applicable, the GPG. Conformance is required and will be strictly enforced unless a deviation has been approved. NSF may return without review applications that are not consistent with these instructions. See Chapter IV.B of the GPG for additional information. NSF must authorize any deviations from these instructions in advance. Deviations may be authorized in one of two ways:

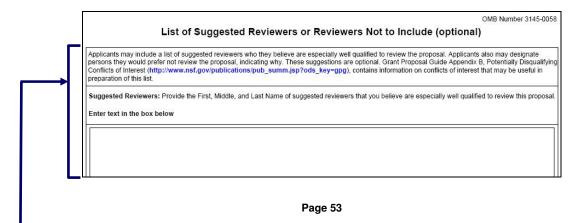
- 1. Through specification of different requirements in an NSF solicitation; or
- **2.** By the written approval of the cognizant NSF Assistant Director/Office Head or designee. These deviations may be in the form of a "blanket deviation" for a particular program or programs or, in rare instances, an "individual" deviation for a particular application.

Applicants may deviate from these instructions only to the extent authorized. Applications must identify the deviation in one of the following ways as appropriate - (a) by identifying the solicitation number that authorized the deviation in the appropriate block on the application Cover Sheet; or (b) for individual deviations, by identifying the name, date and title of the NSF official authorizing the deviation. Further instructions are available on the FastLane Website (https://www.fastlane.nsf.gov/fastlane.jsp).

Requests for approval of a deviation from NSF's electronic submission requirement must be forwarded to the cognizant NSF program for review and approval prior to submission of the paper application.

3. NSF Suggested Reviewers or Reviewers Not to Include

Applicants may include a list of suggested reviewers who they believe are especially qualified to review the application. Applicants also may designate persons they would prefer not review the application, indicating why. These suggestions are optional. Grant Proposal Guide Chapter II, Exhibit II-2, *Potentially Disqualifying Conflicts of Interest*, contains information on conflicts of interest that may be useful in preparation of this list.

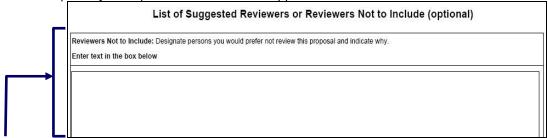


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3.1 Enter Suggested Reviewers

Suggested Reviewers - Provide the First, Middle, and Last Name of suggested reviewers that the applicant believes are especially well qualified to review this application.



3.2 Enter Reviewers Not to Include

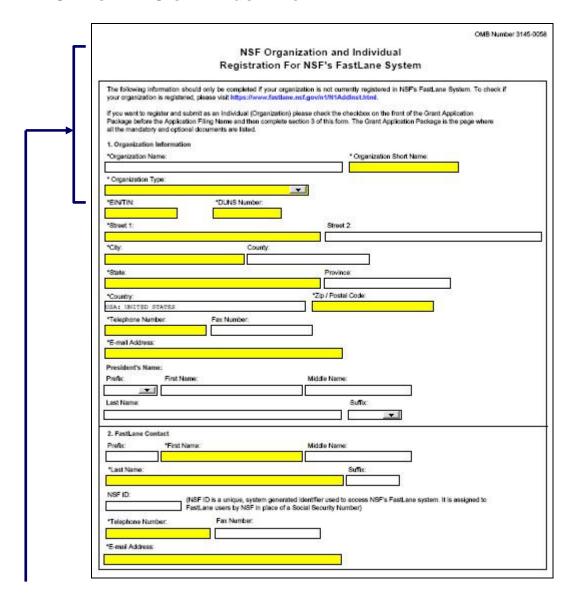
Designate persons the applicant would prefer not review this application and indicate why.

The cognizant Program Officer handling the application considers the suggestions and may contact the Applicant for further information. However, the decision whether or not to use the suggestions remains with the Program Officer.

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4. NSF FASTLANE SYSTEM REGISTRATION



4.1 Enter Organization Information

The following information should only be completed if the applicant's organization is not currently registered in NSF's FastLane System. To check if an organization is already registered, please visit https://www.fastlane.nsf.gov/b6/B6Institutions.htm. If the applicant is not employed by, or affiliated with, an organization, please complete the Individual Information in section 3 of this form.

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Field Name	Input
*Organization Name	Pre-populated from the R&R form. Enter the full name of the applicant's organization for NSF records (up to 64 characters, including spaces). This is required information.
*Organization Short Name	Enter the short name of your organization in 26 characters or less for identification purposes. If your full name can fit within 26 characters, you should use the same name here. You should not truncate your full name at 26 characters. The Short Name should be a unique identifier. This field is required.
*Organization Type	Choose your type of organization from the drop-down list. This field is required.
*EIN/TIN	Pre-populated from the R&R form. (9 digits, no hyphens). An EIN (Employer Identification Number) or TIN (Taxpayer Identification Number) is a nine-digit number that the IRS assigns in the following format: -00-0000000. The IRS uses this number to identify taxpayers that are required to file various tax returns. Employers, sole proprietors, universities, corporations, partnerships, nonprofit associations, trusts, and estates of decedents, government agencies, certain individuals, and other business entities use EIN/TIN. If the applicant's organization is not in the U.S., type 44-4444444. This is required information.
*DUNS Number	Pre-populated from the R&R form (9 digits, no hyphens). This is a unique 9-digit identifier provided by Dun & Bradstreet. It is an organizational identifier used by the federal government. If the organization does not have a DUNS number, it must contact Dun and Bradstreet at (800) 333-0505 to obtain one. A DUNS number will be provided to them immediately by telephone at no charge. This is required information.
*Street 1	Pre-populated by RR. The physical address of the organization. Up to two lines may be used for the street address. The second line is not required.
Street 2	Pre-populated by RR. The physical address of the organization. You may use up to two lines for the street address. The second line is not required.
*City	Pre-populated by RR. The name of the city/place where the organization operates.
County/Parish	Pre-populated by RR. The name of the county/parish where the organization operates.
*State	Pre-populated by RR. The name of the State where the organization is registered. Choose the state name from the drop-down list. (If a foreign address, skip). This field is required if the Organization is located in the United States.
Province	Pre-populated by RR. Enter the Province.
*Zip Code	Pre-populated by RR. The complete nine digits of the zip code (no dashes & if foreign address, skip). This field is required if the Organization is located in the United States.
*Country	Pre-populated by RR. The country of the organization. (Foreign address, choose Country)
*Telephone Number	Enter the telephone number of the organization for NSF to use to contact your business (enter area code and number, for U.S. phones, using only ten digits, no hyphens). Extensions, dashes or alphabetical characters cannot be accommodated in the phone number. This field is required.
Fax Number	(10 digits, no hyphens, no country code) Enter the fax number of the organization.
*Email Address	Enter an E-mail address for the organization where NSF can contact your business electronically (must be of the format username@something.com or similar). This field is required.

4.2 Enter President's Name

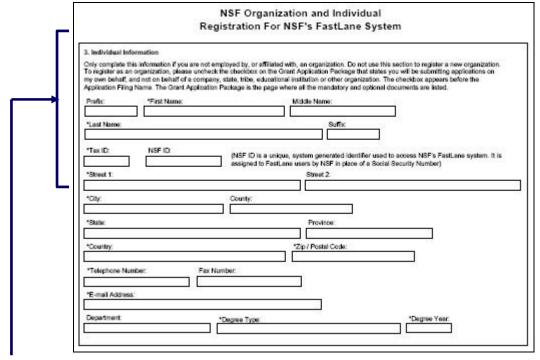
Field Name	Input
Prefix	Enter the prefix of the president of the organization.
First Name	Enter the first name of the president of the organization.
Middle Name	Enter the middle name of the president of the organization.
Last Name	Enter the last name of the president of the organization.
Suffix	Pre-populated by RR. The prefix of the FastLane Contact. This person will be the point of contact for FastLane in the organization and responsible for performing administrative management functions within FastLane (e.g., giving out passwords, submitting applications). This may be the same person as an Authorized Organizational Representative. Do not enter non-alphabetic characters (e.g., periods or hyphens) or spaces.

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4.3 Enter FastLane Contact

Field Name	Input
Prefix	Pre-populated by RR. The prefix of the FastLane Contact. This person will be the point of contact for FastLane in the organization and responsible for performing administrative management functions within FastLane (e.g., giving out passwords, submitting applications). This may be the same person as an Authorized Organizational Representative. Do not enter non-alphabetic characters (e.g., periods or hyphens) or spaces.
*First Name	Pre-populated by RR. The first name of the FastLane Contact. This field is required.
Middle Name	Pre-populated by RR. The middle name of the FastLane Contact.
*Last Name	Pre-populated by RR. The last name of the FastLane Contact.
Suffix	Pre-populated by RR. The suffix of the FastLane Contact.
NSF ID	Enter the NSF ID for the FastLane Contact (9 characters). NSF ID is a unique, system generated identifier used to access NSF's FastLane system. It is assigned to FastLane users by NSF in place of a Social Security Number.
*Telephone Number	Pre-populated by RR. (10 digits, no hyphens, no country code) The FastLane Contact's phone number. This field is required.
Fax Number	Pre-populated by RR. (10 digits, no hyphens, no country code) The FastLane Contact's fax number.
*Email Address	Enter the e-mail address for the FastLane Contact. This field is required.



4.4 Enter Individual Information

Only complete this information if the applicant is not employed by, or affiliated with, an organization. Do not use this section to register a new organization.

Field Name	Input
Prefix	Enter the prefix of the individual who will be the point of contact for FastLane and responsible for performing organizational management functions within FastLane. This may be the same person as an Authorized Organizational Representative. Do not enter non-alphabetic characters (e.g., periods or hyphens) or spaces.
*First Name	Enter the first name of the individual who will be the point of contact for FastLane and responsible for performing organizational management functions within FastLane. This field is required.

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Middle Name	Enter the middle initial of the individual.
*Last Name	Enter the last name of the individual. This field is required.
Suffix	Enter the name suffix of the individual.
*Tax ID	Enter the Tax ID Number (9 digits, no hyphens). This is a nine-digit number that the IRS assigns. The IRS uses this number to identify taxpayers that are required to file various tax returns. This field is required.
NSF ID	Enter your NSF ID (9 characters). NSF ID is a unique, system generated identifier used to access NSF's FastLane system. It is assigned to FastLane users by NSF in place of a Social Security Number.
*Street 1	Enter your physical address. You may use up to two lines for the street address. The second line is not required. This field is required.
Street 2	Enter your physical address. You may use up to two lines for the street address. The second line is not required.
*City	Enter the name of the city. This field is required.
County/Parish	Enter the name of the county/parish.
*State	Choose the name of the state where you are registered from the drop-down list (If foreign address, skip). This field is required if the individual is located in the United States.
Province	Enter the province.
*Zip Code	Enter the complete nine digits of your zip code (no dashes). (If foreign address, skip). This field is required if the individual is located in the United States.
*Country	Choose the country from the drop-down list (Foreign address, choose Country)
*Telephone Number	Enter the telephone number of the individual (enter area code and number, for U.S. phones, using only ten digits). Extensions, dashes or alphabetical characters cannot be accommodated in the phone number. This field is required.
Fax Number	Enter the fax number of the individual.
*Email Address	Enter the E-mail of the individual (must be of the format username@something.com or similar). This field is required.
Department	Enter the Department of the individual.
*Degree Type	From the drop-down list, choose the name of the highest degree the individual has earned. This field is required.
*Degree Year	Enter the 4 digit year in which this degree was earned. This field is required.

5. DIRECTORATE SPECIFIC FORMS

5.1 Biological Sciences (BIO) Classification Form

For applications submitted to the Directorate for Biological Sciences, a Biological Sciences Classification form is required to be submitted. The applicant should use the Proposal File Update module in FastLane to enter this information. The applicant will not be able to check the status of an application until this information is provided.

5.2 Division of Undergraduate Education (DUE) Project Data Form

For applications submitted to the Division of Undergraduate Education (DUE) a Project Data form is required to be submitted. The applicant should use the Proposal File Update module in FastLane to enter this information. The applicant will not be able to check the status of an application until this information is provided.

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VII. NSF APPLICATION CHECKLIST

It is imperative that all applications conform to the application preparation and submission instructions identified in the SF 424 (R&R), the *NSF Grants.gov Application Guide*, and where specified, the *NSF Grant Proposal Guide (GPG)* http://www.nsf.gov/publications/pub summ.jsp?ods key=gpg.

Applications also must comply with NSF font, spacing and margin requirements. The guidelines established in the GPG Chapter II.B establish minimum requirements, however, readability is of utmost importance and should take precedence in selection of an appropriate font. Conformance with all preparation and submission instructions is required and will be strictly enforced unless a deviation has been approved in advance of application submission. NSF may return without review applications that are not consistent with these instructions. See GPG Chapter IV.B, Return Without Review http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg, for additional information.

Prior to electronic submission via Grants.gov, it is **strongly recommended** that an administrative review be conducted to ensure that an application complies with all application preparation instructions, in the format specified. This checklist is not intended to be an all-inclusive repetition of the required application contents and associated application preparation guidelines. It is, however, meant to highlight certain critical items so they will not be overlooked when the application is prepared.

SF 424 R&R Forms

l] SF 424 (R&R) Cover Sheet
	[] Renewal Applications: For renewal applications, the previous award number is entered in the Federal Identifier field. (Block 4)
	[] Full Application Related to Submission of a Preliminary Application. If a new full application is being submitted that is related to a previously submitted preliminary application, the assigned preliminary application number is entered in the Federal Identifier field. (Block 4a.)
	[] Type of Application. For purposes of NSF, the box for "Continuation" will not be utilized and should not be checked. (Block 8)
	[] Application Certifications: The requisite application certifications are submitted by the Authorized Organizational Representative upon checking the "I agree" box (Block 17) and submitting the application. See GPG Chapter II.C.1.e, Proposal Certifications for a complete listing of the requisite certifications.
	[] SF LLL or other Explanatory Documentation. A scanned copy of the SF LLL (if applicable) is attached in Block 18. See GPG Chapter II.C.1.e, Proposal Certifications.
[] Project/Performance Site Location(s)
	[] The primary site where the work will be performed is indicated. If a portion of the project will be performed at any other site(s), the site location(s) is identified.
[] R&R Other Project Information
	[] Complete Questions 1 through 6.
	[] Project Summary/Abstract. Note limitation of one page, and the requirement that both merit review criteria be separately addressed within the body of the Project Summary. Attach in Block 7 of the R&R Other Project Information Form. See GPG Chapter II.C.2.b, Project Summary, for more information.

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	[] Project Narrative (referred to in the GPG as Project Description). Attach in Block 8 of the R&R Other Project Information Form.
	[] Note limitation of 15-pages. See GPG Chapter II.C.2.d, Project Description, for more information.
	[] Merit Review Criteria: Ensure both merit review criteria are described as an integral part of the narrative. See GPG Chapter II.C.2.d.(i).2
	[] Inclusion of URLs (Universal Resource Locators) within the Project Narrative: PIs are advised that the Project Narrative must be self-contained and are cautioned that URLs (Internet addresses) that provide information necessary to the review of the application should not be used because reviewers are under no obligation to view such sites. See GPG Chapter II.C.2.d.(ii).
	[] Results from Prior NSF Support: Required only for PIs and co-PIs that have received NSF support within last 5 years. See GPG Chapter II.C.2.d.(iii).
	[] Human-resource information: Required information for renewal applications from academic institutions only. See GPG Chapter V.B.2.
	[] Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF Website at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf
	[] Bibliography and References Cited. No page limitation, however, this section must include bibliographic citations only and must not be used to provide parenthetical information outside of the 15-page Project Narrative. Each reference must be in the specified format. Attach in Block 9 of the R&R Other Project Information Form. See GPG Chapter II.C.2.e, References Cited, for more information.
	[] Facilities and Other Resources. Attach in Block 10 of the R&R Other Project Information Form. See GPG Chapter II.C.2.i, Facilities, Equipment and Other Resources, for more information. See GPG Chapter II.C.2.i, Facilities, Equipment and Other Resources, for more information.
	[] Equipment. Attach in Block 11 of the R&R Other Project Information Form. See GPG Chapter II.C.2.i, Facilities, Equipment and Other Resources, for more information.
	[] Other Attachments. A description of the types of information appropriate for inclusion in this section is defined in GPG Chapter II.C.2.j, Special Information and Supplementary Documentation. Attach in Block 12 of the R&R Other Project Information Form.
	[] Applications that request funding to support postdoctoral researchers must include, as a supplementary document (limited to one-page), the mentoring activities that will be provided for such individuals. Applications that include funding to support postdoctoral researchers, and, do not include the requisite mentoring plan will be returned without review. See GPG Chapter IV.B.
	[] Any additional items specified in a relevant NSF Program Solicitation: Attach in Block 12 of the R&R Other Project Information Form.
[]	R&R Senior/Key Person Profile (EXPANDED)
	[] A profile is required for each senior/key person proposed. See GPG Chapter II. Exhibit II-7, for the categories of personnel considered senior project personnel by NSF.

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	[] Biographical Sketch(es): A biographical sketch is required for all senior project personnel and each biographical sketch should be prepared in accordance with the order and format specifications identified in GPG Chapter II.C.2.f, Biographical Sketch(es). Note limitation of 2-pages for each biographical sketch.
	[] Current and Pending Support: Current and Pending Support is required for all senior project personnel and should be prepared in accordance with instructions identified in GPG Chapter II.C.2.h.
[] R&R Personal Data
	[] Referred to in the GPG as Information About PIs/PDs and co-PIs/co-PDs. With the exception of the name(s) of the PD/PI and any co-PD/PIs, submission of the requested information is voluntary. See GPG Chapter II.C.1.a, Information about Principal Investigators/Project Directors and co-Principal Investigators/co-Project Directors, for more information.
[] R&R Funds Requested Budget
	[]Note in particular, the instructions regarding budget preparation as outlined in GPG Chapter II.C.2.g., as well as those provided in the Grants.gov Application Guide.
	[] Budget Justification: Optional. Note 3-page limitation per application. Attach on Line K of the Research & Related Budget Form.
<u>N</u> :	SF-Specific Forms
[] National Science Foundation Grant Application Cover Sheet
	[] Funding Opportunity Number: Pre-populated by Grants.gov. Verify the information is correct.
	[] NSF Unit of Consideration: See https://www.fastlane.nsf.gov/pgmannounce.jsp and follow the instructions for finding the Division and Program Information for the funding opportunity shown in Block 2.
	[] Other Information: If the application includes any of the items listed, check the relevant box(es). (Block 4)
	[] Additional Single-Copy Documents. A description of the categories of information appropriate for inclusion in this section is defined in GPG Chapter II.C.1, Single-Copy Documents.
	[] Information about Principal Investigators/Project Directors (except for the required information regarding current or previous Federal research support and the name(s) of the PI/co-PI, submission of the information is voluntary).
	[] Proprietary or Privileged Information Statement (if applicable).
	Authorization to Deviate from NSF Proposal Preparation Requirements (if applicable). See GPG Chapter C.1.b, Deviation Authorization for additional information.
Sı Di	List of Suggested Reviewers, or Reviewers Not to Include (optional). See GPG Chapter II.C.1.c, List of uggested Reviewers or Reviewers Not to Include for additional information. GPG Exhibit II-2, Potentially squalifying Conflicts of Interest, contains information on conflicts of interest that may be useful in preparation of its list.

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[] NSF FastLane System Registration

[] If applicable. To be completed only if the applicant organization is not currently registered in NSF's FastLane system. See https://www.fastlane.nsf.gov/b6/B6Institutions.htm. Individuals not employed by, or affiliated with, an organization must complete the information in Section 3.

VIII. ADMINISTRATION OF AWARDS

Guidance regarding the administration of NSF awards is contained in the NSF Award & Administration Guide and the relevant award conditions: http://www.nsf.gov/publications/pub summ.jsp?ods key=aag